NOVEMBER
1957

fueloil & oil heat

35 Years devoted to Progress in Oilheating and Airconditioning

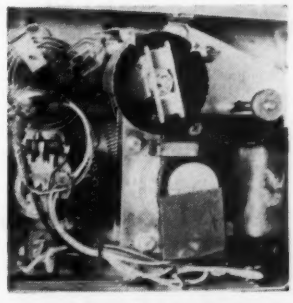
EAST ENGINEERING
LIBRARY

Home Cooling by oil Men

Distributor Elliott-Lewis favors oil Dealers in Airconditioning 51

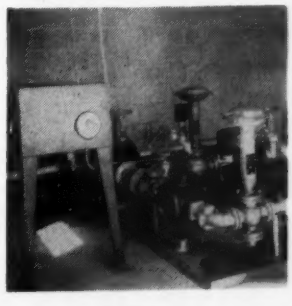
Year-round comfort Controls

New Tempotherm Clock tops List of complete Line of Thermostats 56



Fueloil Blending at Home

Some Marketers make middle Grades by hot Mixing light and heavy Oils 70



Air-Cooling Show ushers in busy Chicago Week, Nov. 18-21 62

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710

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NOVEMBER Fueloil & oilheat 1957

VOLUME 16 NUMBER 11

Editorial, circulation and advertising Office: 2 West 45th St., New York 36, N. Y.

CONTENTS

SUBJECT	PAGE	AUTHOR
Home Cooling by oil Men	51	WILLIAM J. STEIN
Pipes will cool You, too	54	V. M. DOUGLAS
General Controls	56	J. W. SCHULZ
Baltimore model Home	61	
Busy show Week in Chicago	62	
Exhibitors at Air-Conditioning Show	63	
What Destiny for Distillates?	66	C. E. KRAMB
Niagara Falls consumer Study	68	
I-B-R Laboratory dedicated	69	
Fueloil Blending at Home	70	LAWRENCE LOWY
Should fueloil Specs be modified?	75	D. W. LOCKLIN
Economic Effect of two-way Radio	78	TOM CARSON
Heating oil Sales 1956	80	
OHMR: *Pittsfield, Mass.*	82	
COMMERCIAL - INDUSTRIAL SECTION		
Hot Oil Start-ups for No. 6 Jobs	84	JEAN L. DUPUIS

NEWS

Wisconsin OHI holds industry Rally 26

Haines speaks at UCLA *Symposium* 32

OHI names new board Members 34

Cleveland forms Heating-Cooling Council 38

API Program will be streamlined 42

Builders ready for January Convention 46

Dodge reports on August building Contracts 46

Esso, Gilbert & Barker develop new Burner 48

DEPARTMENTS

6	Editorial Leaks
8	Fueloil Price, Degree-Days
10	Oilheating Trends
20	Government on Fuels
22	Names in the News
99	Industry Groups
110	New Products
126	Readers' Problems
133	Manufacturers' Activities

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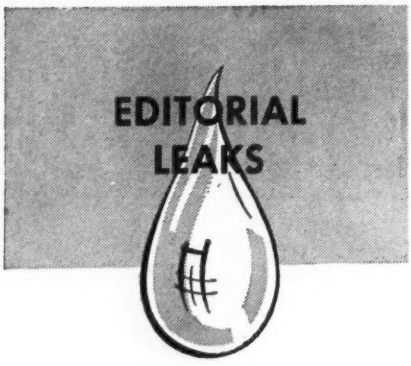
Among other things . . .

Continuing the series, "Home Cooling by oil Men," the feature beginning on page 51 tells of Elliott-Lewis' experience as an airconditioning distributor in the Philadelphia area. This old-time, prominent fueloil and oilheating dealer has been successful selling and distributing airconditioning equipment because it favors oilheating dealers as outlets. Another instance where ability to merchandise, knowledge of equipment and awareness of the importance of customer satisfaction allows orderly expansion of activities.

Gulf Oil's Kramb contributes a convincing analysis of "What Destiny for Distillates?" (page 66). He outlines the reasons why refiners are interested in the continuing growth in the sale of distillate fueloil and makes a strong point of the necessity for fueloil distributors to actively sell oilheating equipment.

And, we think you'll find "Fueloil Blending at Home" (page 70) complete and thought-provoking.



IN A THREE-DAY meeting September 23-25 American small business got a lot of special attention in Washington and over the Nation. With considerable fanfare, including White House stationery, President Eisenhower invited a thousand men to come to Washington for a new kind of venture.

The project was called the "President's Conference on Technical and Distribution Research for the Benefit of Small Business."

There was scattered press and congressional criticism of the meetings over the fact that too few actual small businessmen were present. That had not been the aim of the project, as a matter of fact.

Small businessmen were there, probably 200 of them from all kinds of backgrounds ranging from the Kansas hardware merchant, with two employees to the Tennessee manufacturer with 200. But they only came to put a yardstick on the values being discussed by the other groups.

President "Ike" set the pattern for the discussions in his outline on the opening day. These are his reasons for calling the conference, as he listed them:

1) Small business, with four million typical units in operation today, represents the backbone of the American economy.

2) The day when small business could succeed by dint of the proprietor's personality and long hours is fast passing out.

3) Big business is taking a growing share of the total dollar volume through its interest and its activity in the fields of research, both in product and in distribution techniques.

4) Small business to continue healthy must gain the benefit of research, either through private projects or, as a beginning, through making the most of research material now available to it from outside sources.

FROM THIS background of thinking the list of 1,000 invitees represented all of the principal fields of business research that could help small business.

First, there were the university men, mostly professors or deans of business administration.

Next came representatives of the professional management companies that undertake special chores for any business, small or large . . . men trained in tackling tough problems for a fee.

Third were representatives of many Government offices dealing with commerce, both federal and state, and it is amazing to learn how much help they have in small business research for those who inquire.

Fourth were bankers, usually vice-presidents in charge of small business considerations . . . typically Connecticut's Stamford Trust Co., San Francisco's Bank of America.

Then came trade associations, with particular attention to those that had done significant research for their members. There were 59 of these.

Finally, editors or publishers of magazines were invited, and the list here was limited to 38 publications where their staffs were credited with more than normal activity in business research. Most of these were business magazines, although there were a few of the prominent consumer publications in the list, such as *Life, Saturday Evening Post, Fortune.*

The Oil Heat Institute of America was included in the invitation list through its president, Verne Resek of Cleaver-Brooks, Milwaukee. FUELOIL & OIL HEAT, through its editor, was included.

THE GENERAL CHAIRMAN of the conference was Eric A. Walker, president, Pennsylvania State University. Honorary vice-chairmen were Secretary of Commerce Sinclair Weeks and Small Business Administrator Wendell B. Barnes. Both were speakers at the opening session.

L. T. White, vice-president for business research and education, Cities Service, New York, was one of five members of the Action Committee which had the job of boiling down the conference results into a report to the President with recommendations for legislative consideration.

Other invited individuals of interest to the fueloil and oilheating industry were George McDaniel, assistant for jobber relations to the Director of Marketing, Socony Mobil Oil Co., New York, Richmond F. Meyer, president Mid-Hudson Oil Co., Poughkeepsie, N. Y., and also president of the Empire State Petroleum Assn.

Also I. L. Schurman, president Consumers Petroleum Co., Chicago, Wade W. Cloyd, supervisor retail development, American Radiator & Standard Sanitary Corp., New York, and John H. Aiken, executive secretary, National Oil Jobbers Council, Washington.

THE BASIC framework of the Conference included a day of speeches from the various segments described, interspersed with case histories by individual small businessmen. The second day was featured by workshop sessions of about 30 men each, with the editor attending one on the subject, "How to Develop More Sales per Dollar of Payroll." It lasted for six hours and a lot of good comment developed.

"Small Business" as visualized by this conference is a retail, wholesale or service company with fewer than 50 employees and a manufacturer with fewer than 500.

Early in the conference sessions it was recognized that many of the problems of small business today have to do with financing, raising capital, heavy taxation, restrictive labor practices and the like. However, it was clearly pointed out that the men were not called to discuss those typical troubles.

Rather, the President had specifically limited the scope to research and what it can do for small companies. If new products, new technology and new marketing methods can be found through research by and for small business the older perennial problems will be eased.

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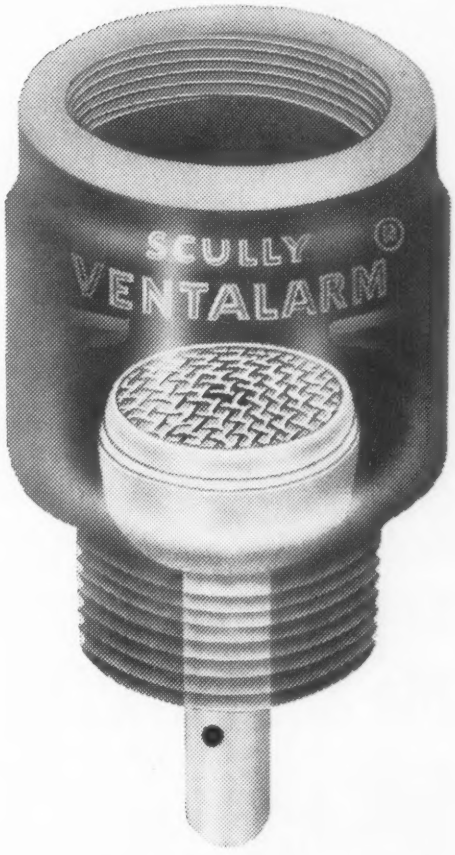

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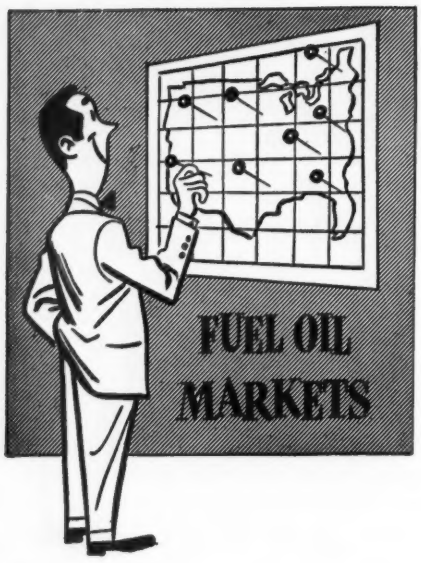

CHANGES in the price table this month were principally minor adjustments in New England at tank wagon level and four Midwest changes.

In New England, Providence and New Haven were down slightly; Springfield was up. New York was down a tenth.

In Cleveland the tank car price was up two tenths of a cent, Chicago voluntary allowance dropped from 1.25¢ to 1¢ while the St. Louis voluntary allowance was increased from a half cent to one cent. In the Midwest tank wagon column, Indianapolis was down three tenths, and Des Moines was down a half cent.

Starting the new season for degree-days, we find September decidedly warmer than normal in many of the heavy oilheating markets. Some others like New York and Philadelphia were quite a bit cooler.

For what it is worth, one of the best rated organizations for long range forecasts has estimated the last quarter of this year to be 27% colder than last year east of the Rockies. These professional weathermen, generally, are predicting a colder than normal winter.

Our September 30 check on secondary stocks of No. 2 fueloil show a somewhat lighter position than we had a year ago. The secondary table compares this date with two previous years and indicates a significant change. Studies of this kind by individual companies indicate that the total amount of storage capacity allotted to No. 2 fuel is declining in favor of a stepped-up rate of turn-over.

No. 2 Heating Oil (Including No. 3 & PS200)

Price per gallon as of October 15, 1957

	Tank Car	Tank Wagon		Tank Car	Tank Wagon
Portland, Me.	11.2(A)	14.5	Richmond	11.4(A)	14.5
Boston	11.1(A)	14.8	Charleston, S. C.	11.0(A)	13.7
Providence	11.1(A)	14.5	Chicago	11.0*(B)	14.6
Springfield, Mass.	12.2(A)	15.3	Detroit	12.25*	16.2
Hartford	11.45(A)	14.7	Cleveland	12.3*	15.3
New Haven	11.0(A)	14.5	Minneapolis	10.25	15.3
Syracuse	12.0(A)	15.5	St. Louis	11.5*(B)	14.9
Albany	11.2(A)	14.6	Indianapolis	11.05*	15.6
New York	11.0(A)	14.7	Milwaukee	12.35*	15.5
Newark	11.0(A)	14.3	Des Moines	10.50	14.4
Philadelphia	11.0(A)	14.3	San Francisco	11.75*	14.5
Harrisburg	11.1	14.7	Portland, Ore.	12.45*	15.2
Baltimore	11.0(A)	14.5	Seattle	12.55*	15.3
Wilmington, N. C.	11.0(A)	14.1	Spokane	14.45*	17.2
Washington	11.0(A)	14.8	Los Angeles	11.25*	14.0

*Delivered.

Tank wagon prices shown are for maximum one-time delivery discounts.
(A) Price subject to .50¢ vol. allowance.
(B) Price subject to 1.0¢ vol. allowance.

DEGREE DAY TABLE

ONE MONTH ONLY					SEASON TO DATE			
	September		Percent					Percent
Normal	1956	1957	Change*		Normal	1956	1957	Change*
139	262	152	+ 9.4	Albany AP	6888	7343	6721	— 2.4
8	4	36	+350.0	Atlanta AP	2826	2876	2239	— 20.7
50	60†	33†	— 34.0	Baltimore AP	4782	5031	4202	— 12.1
77	174	57	— 26.0	Boston AP	5742	6096	5548	— 3.3
122	218	140	+ 14.8	Buffalo AP	6720	6885	6197	— 7.8
7	46	37	+428.5	Charlotte, N.C. AP	3205	3255	2610	— 18.6
90	86	89	— 1.1	Chicago AP	6252	6199	5952	— 4.8
42	50	41	— 2.4	Cincinnati CO	4522	5047	4450	— 1.8
75	159	97	+ 29.3	Cleveland AP	5950	6124	5553	— 6.7
0	0	0	..	Dallas AP	2272	2328	2225	— 2.1
120	66	141	+ 17.5	Denver AP	6051	5745	5783	— 4.4
99	103	113	+ 14.1	Des Moines AP	6384	6885	6116	— 4.2
96	172	130	+ 35.4	Detroit AP	6336	6497	6015	— 5.1
105	197‡	196‡	+ 84.9	Grand Rapids CO	6402	7030	6448‡	+ .7
101	243	122	+ 20.8	Hartford AP	6094	6651	6108	+ .2
320	216	263	— 17.8	Helena AP	7951	8472	8094	+ 1.8
0	0	0	..	Houston AP	1388	1236	995	— 28.3
79	104	90	+ 13.9	Indianapolis AP	5581	5749	5108	— 8.5
44	17	29	— 34.1	Kansas City AP	4880	5022	4562	— 6.5
17	0	0	..	Los Angeles CO	1432	1511	963	— 32.8
51	63	22	— 56.9	Louisville AP	4434	4507	4070	— 8.2
134	188	193	+ 44.0	Milwaukee AP	6944	7169	7019	+ 1.1
157	202	184	+ 17.2	Minneapolis AP	7748	8558	7472	— 3.6
0	0	6	..	New Orleans CO	1175	1174	765	— 34.9
39	102	47	+ 20.5	New York CO	5032	5320	4694	— 6.7
88	78	91	+ 3.4	Omaha AP	6123	6683	5773	— 5.7
33	107‡	65‡	+ 96.9	Philadelphia CO	4523	4878	4590	+ 1.5
56	180	64	+ 14.3	Pittsburgh CO	5035	5579	4638	— 7.9
199	307	195	— 2.0	Portland, Me. AP	7493	7855	7334	— 2.1
85	64	10	— 88.2	Portland, Ore. CO	4046	4318	4280	+ 5.8
107	194	93	— 13.1	Providence AP	6049	6355	5761	— 4.8
50	86	70	+ 40.0	Roanoke, Va. AP	4152	4100	3375	— 18.7
38	17	17	— 55.3	St. Louis CO	4462	4640	4237	— 5.0
88	58	101	+ 14.7	Salt Lake City AP	5785	5560	5733	— .9
110	91	56	— 49.1	San Francisco CO	2523	2681	2367	— 6.2
298	423	318	+ 6.7	Sault Ste. Marie AP	9016	9040	8854	— 1.8
134	147	30	— 77.6	Seattle CO	4237	4683	4371	+ 3.2
102	190	145	+ 47.2	Toledo AP	6322	6584	6046	— 4.4
37	88	40	+ 8.1	Washington AP	4337	4514	4012	— 7.5

*Compared with normal. †City Office. ‡Airport Office.

Distillate Fueloils

PRIMARY STOCKS*
(*Thousands of Barrels*)
East of Rockies

	Oct. 11 1957	Oct. 12 1956
East Coast	68,933	59,552
Midwest	48,645	47,076
Gulf Coast	34,361	29,466
Total	151,939	136,094

*American Petroleum Institute.

SECONDARY STOCKS
East of the Rockies
PERCENTAGE FILLED ON SEPTEMBER 30

	1957	1956	1955
New England	76.9%	72.8%	68.3%
Mid-Atlantic	70.8	83.9	75.6
South Atlantic	45.8	68.1	71.8
TOTAL EAST COAST	70.1	79.5	73.3
Midwest	81.6	79.9	74.1

Mack cabs are a lesson in compact, functional design. The extra space you pick up with a Mack B Model cab goes right into increased payloads.

Mack trucks earn more... get more done... because PART FOR PART, MACK TRUCKS ARE THE BEST BUILT

Take the Mack B Model Cab!

It's a compact, handsome unit that's packed with advanced features for safety, economy, driving ease and million-mile durability.

- Drivers like the roomy comfort, the draft-free ventilation, the smoothly operating controls and unsurpassed visibility.
- Mechanics like the engine accessibility and the wide, wide working area when the hood is up . . . the quickly removable door panels, instrument panels and fenders . . . and the easily accessible fuse board in the glove compartment.
- You will like the rugged strength that underlines their safety . . . the greater payloads . . . the stamina that rolls back upkeep costs and the handsome lines that add prestige to any fleet.

And the same uncompromising superiority is built into *every* Mack component: engines, transmissions, axles, frames and rear ends. Part for part, no other truck is built like a Mack, stands up like a Mack, or has the low-upkeep, high-performance, *higher* earning power of a Mack. Mack Trucks, Inc., Plainfield, New Jersey. In Canada: Mack Trucks of Canada, Ltd.

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Mack B Model cabs need less attention, ride more quietly, keep their rugged good looks longer than any other make . . . thanks in large part to Mack's unitized cab-and-front-end construction.

Cab, fenders, running boards, hood, and radiator shell are mounted *as a single unit* that rides on four rubber cushions in a diamond pattern.

Results? All components remain in line, unaffected by frame flexing. Components never "fight" one another. Rattling, buzzing and squeaking are eliminated. And the whole cab can be removed as a single unit, in one fast hoisting operation, to expose the engine and chassis for faster powerplant removal or sheet metal repair.

4696

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first name for
TRUCKS

Oilheating Trends

OILHEATING INSTALLATIONS seem to be closing the gap with factory shipments as we had predicted some months ago. During the early part of the year, shipments were running considerably ahead of dealer installations. We could not account for the differences by referring to dealer stocks, so obviously the inventory build-up was at the point of boiler or furnace factories and in wholesale houses.

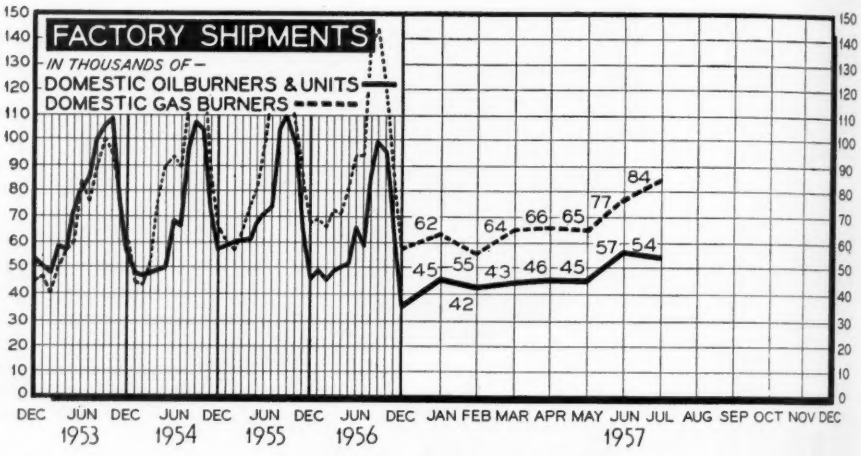
By the end of the third quarter of the year, total oilheating installations were running only 13.5% below last year. At the end of July, the latest available data, factory shipments on the year were down 11.2%. This is the closest comparison we've had this year, and they will probably come still closer before the end of the year.

September installations of domestic oilburners and units are estimated at 78,050 compared with 88,415 in September last year. The September installations were divided: New Homes, 24,248; Replacements of old oilburners, 18,477; and Conversions from other fuels, 35,325.

For the total nine months: New home installations, 150,762 compared with 175,019 the previous year, down 14%; Replacements for nine months were 108,030 compared with 99,307 the year before showing a rise of 9%; Conversions from other fuels in nine months were 180,436 compared with 233,132 last year, for a drop of 23%.

Oilheating Stocks: At the end of September dealers had on hand approximately 88,689 domestic burners and units compared with 95,243 the previous month and with 104,140 the previous year. These September 30 stocks were divided: Separate burners, 39,261; Boiler-burner units, 22,723; and Furnace-burner units, 26,705.

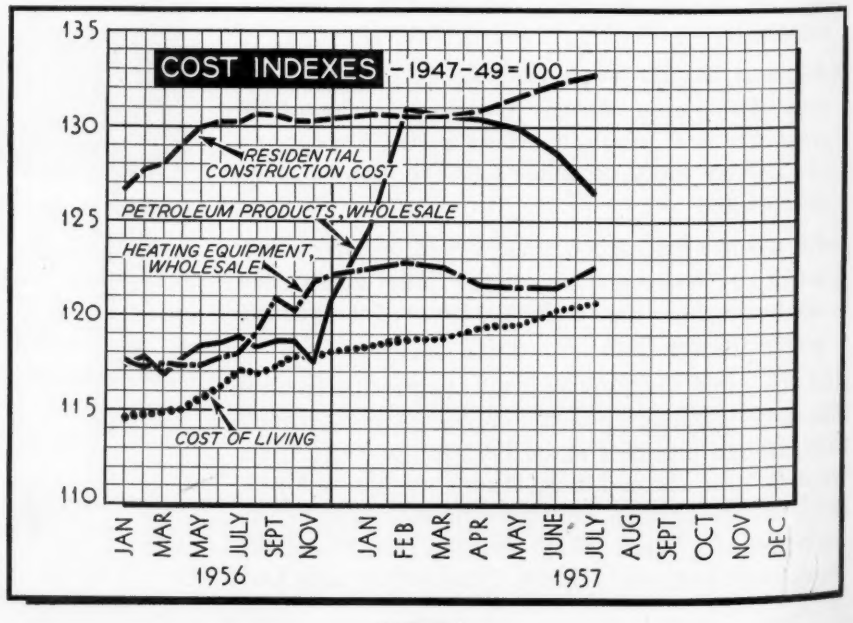
Tank Stocks: Dealer stocks of customer oil tanks at the end of September were approximately 41,528 compared with 55,709 the previous month and with 51,113 a year earlier.



Shipments of Oilburners and Units
(Including Exports)

Adjusted to include manufacturers other than the 145 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	JULY			SEVEN MONTHS		
	1957	*1956*	*Percent Change*	*1957*	*1956*	*Percent Change*
Separate Burners	35,318	37,640	— 6.2	220,358	238,272	— 7.5
Boiler Units	4,883	4,280	+14.1	32,594	33,063	— 1.4
Furnace Units	10,541	15,895	—33.7	72,435	95,194	—23.9
All Domestic	50,742	57,815	—12.2	325,387	366,529	—11.2
Commercial	3,256	2,977	— 9.4	23,834	21,928	+ 8.7
Total	53,998	60,792	—11.2	349,221	388,457	—10.1


COST INDEXES – 1947-49 = 100
RESIDENTIAL CONSTRUCTION COST
PETROLEUM PRODUCTS, WHOLESALE
HEATING EQUIPMENT, WHOLESALE
COST OF LIVING
JAN MAR MAY JULY SEPT NOV JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC
1956 1957

Minimum Retail Prices of Key Dealers

	Sept. Avg.	*Aug. Avg.*
Separate Burners	$316	$314
Boiler-Burners	729	731
Furnace-Burners	606	602

Price Index: Separate Burners 1947-49 is 100%

WHOLESALE

September	95.6	Six months ago	94.9
August	95.3	Year ago	94.1

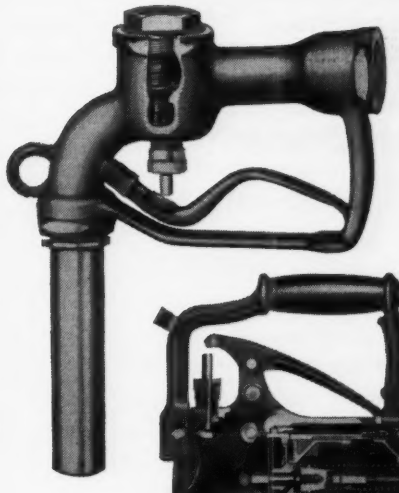
RETAIL

September	92.9	Six months ago	93.5
August	92.6	Year ago	92.8

Immediate Positive Control of Liquids at Dispensing Point

ALUMINUM • BRONZE • SEMI STEEL

liquids handling nozzles



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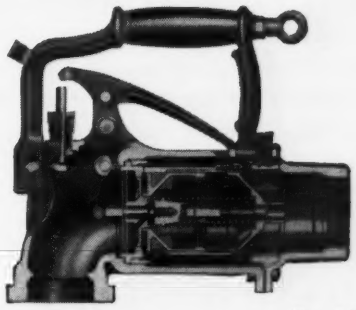

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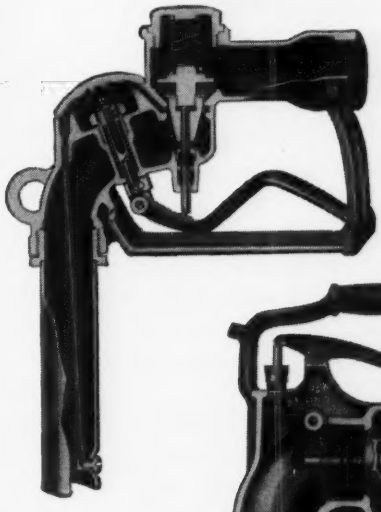

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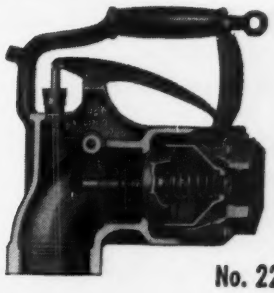


No. 220

No. 210

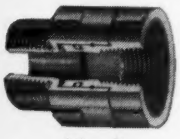
FOR BLENDING, FILLING, TRANSFER

Petroleum Products and Distillates — Anything liquid

OPW has designed these Liquids Dispensing Nozzles in a wide variety of sizes, styles and materials to assure you of having the right nozzle for a fast, dependable liquid delivery. Complete control at point of operation on gravity or pumping operations.

Each engineered for full flow, easy shut-off, no shock, no product surge, minimum pressure drop . . . ALL, for light weight, perfect balance, durability, low maintenance and long service life.

Write for BULLETIN F-9. It describes in detail OPW'S complete line of Liquids Handling Nozzles.



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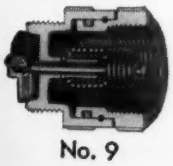

No. 9

OPW hose swivels

PREVENT HOSE KINKS

NO HAZARDS • NO PRODUCT LOSS • MAXIMUM HOSE LINE FLEXIBILITY.

Add life to your hose . . . make it easier to handle . . . eliminate twisting, kinking and tension resulting from rotary motion. Use OPW's leakproof swivels with liquids dispensing nozzles and on industrial hose installations. Turns freely at line pressure up to 125 psi.

STRONGEST LINK IN YOUR HOSE LINE! WON'T PULL APART.

OPW CORPORATION — HANDLING HAZARDOUS LIQUIDS — OPW — VALVES • FITTINGS • ASSEMBLIES — CINCINNATI 25, OHIO

OPW CORPORATION

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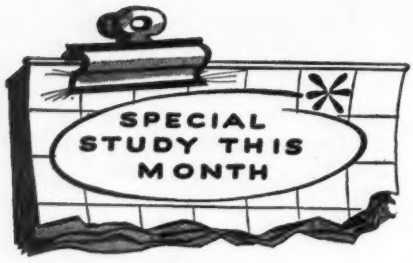


Gas Competition

THIS IS obviously a subject of perpetual concern to oilheating dealers over the nation. Periodically, it is interesting to make a check on trends and dealer attitudes. Our last similar study was published in the August 1955 issue, and we will make some comparisons between the two dates on competitive conditions.

First, we checked for availability of supply as indicated by the local gas company attitudes. In New England, 92% of the cities heard from have gas supply wide open for heating sales while in 8% the gas utility is restricting installations. This is the same ratio we had in 1955.

In the Mid-Atlantic states, 91% of the gas utilities in cities heard from will take all of the heating business they can get, and this compares with 86% of the cities that were wide open two years ago.

There also has been some easing of restrictions in the Midwest, for today 64% of the gas utilities have no restrictions on heating, and this figure two years ago was 58%.

In the Pacific Northwest, where natural gas only arrived last year there are, of course, no restrictions on heating in these communities.

In the Midwestern states, the only area having any large number of restrictions, we find that the average restricting utility has been refusing new heating connections for 27 months; the same measurement in our 1955 study was 29 months.

We next asked the reporting group to tell us which year saw the greatest gas heating gains in their particular cities. In New England, 55% of the dealers say that gas is making its greatest headway this year, 36% say it was in 1956, while 9% of the cities apparently had the greatest pressure in 1955.

In the Mid-Atlantic states, the strongest competition from gas shows up for 1956 with 27% of the dealers naming that as a peak year. In 1957, an indicated 25% of Mid-Atlantic cities had their strongest gas competition. The third strongest year was, of course, 1955 with 14%, and the others ranged in lesser percentages all the way back to 1948.

In the Midwest, the strongest competition from natural gas was divided equally between 1955 and 1956 when 20% of the cities heard from reported that situation in each year. Those cities reporting their strongest gas competition in 1957 were just under 15%.

In summary, we see New England and the Pacific Northwest showing increasing gas strength while in the heavy Mid-Atlantic and Midwest regions, oil heat seems to be improving its position.

Rate Changes

We were next interested in rate changes on gas for heating. Specifically we asked what change there had been in the last year. In New England, 8% of the utilities reduced their rates by an average of 4%. When we asked the same questions two years ago, we found that 31% of the New England utilities had reduced their rates an average of 10%. At that time, quite a number of them were converting from manufactured to natural gas.

None of the New England utilities is reported as having raised their heating rates the past year.

In the Mid-Atlantic states, we find that 6% of the utilities have raised their rates an average of 3% the past year, while 9% of the utilities reduced them an average of 8%. Again the reductions are largely instances of taking in natural gas, although they do include a few important cities like Albany, Brooklyn and Jamaica, who already had natural gas. By comparison, there was much more rate changing in the study two years ago. At that time, 13% of the Mid-Atlantic utilities had raised prices for heating fuel within a year; 16% had reductions.

When we look at the Midwest, we find more activity in rate changing today. In the cities heard from, we find that 18% of the utilities have raised prices an average of 13% while another 9% of the gas companies have lowered them by 3%—all in the past year. When we look back to the 1955 report, we again see that there was more commotion in rate circles for that area. Just under a third of the gas companies had raised heating rates within a year by 8%, while 16% had reduced them an average of 15%.

The Pacific Northwest situation on rate changes is too new to be significant.

Across the country as a whole, it is obvious that gas heating rates are

Oilheating Permits*

SEPTEMBER 1957		NINE MONTHS 1956	1957
0	Albany, N. Y.	46	22
..	Baltimore, Md.	424	..
109	Bridgeport, Conn.	909	716
5	Columbus, O.	16	20
62	Detroit, Mich.	1017	422
61	Elizabeth, N. J.	551	362
26	Freeport, N. Y.	298	218
19	Hartford, Conn.	469	527
30	Irvington, N. J.	299	152
44	Meriden, Conn.	436	364
..	Milwaukee, Wis.	1113	..
22	Minneapolis, Minn.	157	136
21	Montclair, N. J.	121	115
..	Morristown, N. J.	47	..
66	Mt. Vernon, N. Y.	198	352
147	Newark, N. J.	944	835
41	New Bedford, Mass.	728	759
41	New Haven, Conn.	235	231
..	New Rochelle, N. Y.	179	..
66	Norfolk, Va.	364	255
..	Omaha, Neb.	91	..
9	Orange, N. J.	110	71
17	Passaic, N. J.	79	80
34	Paterson, N. J.	365	202
283	Philadelphia, Pa.**	2044	1433
105	Portland, Me.	481	420
210	Portland, Ore.	2344	1450
14	Poughkeepsie, N. Y.	108	77
64	Providence, R. I.	591	..
37	Richmond, Va.	356	272
120	Roanoke, Va.	837	797
113	Rochester, N. Y.	801	589
6	Rockville Centre, N. Y.	95	44
..	Salem, Mass.	349	..
..	St. Louis, Mo.	1515	..
22	St. Paul, Minn.	64	69
0	Schenectady, N. Y.	56	50
..	Spokane, Wash.	410	..
130	Springfield, Mass.	1016	693
14	Stamford, Conn.	196	172
53	Washington, D. C.	334	263
..	White Plains, N. Y.	160	..
20	Wilmington, Del.	249	111
20	Worcester, Mass.	815	127
..	Yonkers, N. Y.	226	..
2031	Totals	17138	12406
	Percent Change		—27.6

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

**Courtesy of "Philadelphia Inquirer."

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

1201

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

P WA022 PD=WUX JOHNSTOWN PENN 25 828 AME=
FRED S HUDSON JR, GENERAL MANAGER OF SALES=
NATIONAL-U.S. RADIATOR CORPN JOHNSTOWN PENN=
NEW ART COMFORTLINE BASEBOARD NOW AVAILABLE WITH ALL
FEATURES REQUESTED BY CONTRACTORS, WHOLESALERS AND
BUILDERS STOP CATALOGS AND LITERATURE AVAILABLE FROM
ALL BRANCH AND SALES OFFICES STOP FOR IMMEDIATE ACTION
CUSTOMERS SHOULD WIRE, PHONE OR WRITE THEIR NATIONAL-U.S.
WHOLESALER OR OUR NEAREST SALES OFFICE=
ROY O SHELKEY, MANAGER FINNED SURFACE HEATING
PRODUCTS NATIONAL-U.S. RADIATOR CORPN=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

KAMLOK
QUICK COUPLERS
633-A
633-B
OPW CORPORATION
OPW
CINCINNATI 25, OHIO
SLIPS ON
CAM TIGHTENS
HOLDS TIGHT
NEVER FAILS
The Fastest, Safest, Surest Coupling Known
634-A
633-F
634-B
633-D
633-C
633-E
633-G
KAMLOK
BRONZE • ALUMINUM • MONEL
STAINLESS STEEL • SEMI-STEEL
ALL STYLES OF ADAPTORS FIT IN ALL STYLES OF COUPLERS OF THE SAME SIZE.
Perfectly tight, no leak connection in seconds. Kamloks couple and uncouple instantly regardless of "hook-up".
Write for Free Bulletin F-10
OPW CORPORATION
2735 COLERAIN AVE., CINCINNATI 25, OHIO

shaking down into a pattern with considerably fewer changes being made in either direction than we found two years ago.

The next move will depend pretty much on what happens to pipeline rates as they are affected by legislation over field prices.

We next asked how much advertising is being done by local gas companies particularly on gas heating. New England has a strong feeling on this, with 92% of the companies saying that the gas industry is doing a lot of advertising, and about two-thirds of the emphasis is on heating.

In the Mid-Atlantic states, we find 67% of the companies saying that the utilities are doing a lot of advertising and about three-fifths of the ads feature heating.

In the central states, only 30% of the utilities appear to be doing heavy advertising, but here three-fourths of the emphasis is on heating. In the Pacific Northwest, half of the utilities are advertising heavily, and again three-fourths of the emphasis is on heating. Putting the whole thing together, approximately 60% of the gas companies in the cities heard from are reported as advertising strongly with just under two-thirds of the space being used to feature heating.

Across the country, oilheating dealers believe that gas heat sales this year will average slightly above last year or above their best previous year. By regions, New England expects them up 25%; Mid-Atlantic expects them down 4%; Midwest expects them to hold even; and the Pacific Northwest, slightly down.

Actually, gas heating installations in the nation in the first half of the year were down 23%. When we get the third quarter figure, it might moderate somewhat. It is important to remember that gas heating is very strong in the South where we have very little oilheating. So it is possible that these opinions of the oil men may hold up under final analysis.

Again there is quite often a feeling that competition is doing better than it actually is.

The practice of renting gas burners still goes on and is particularly strong in New England. There we find a third of the utilities willing to rent them compared with 38% two years ago. In the Mid-Atlantic states, 4% of the gas companies will rent burners compared with 3% in 1955. In the Midwest, the practice is relatively unknown and it has not shown up on the West Coast. Where the utility rents a burner the average charge is about $2.35 a month while two years ago the average was just about $3.00. In every instance reported the utility will credit all rental payments against a purchase.

New home Market

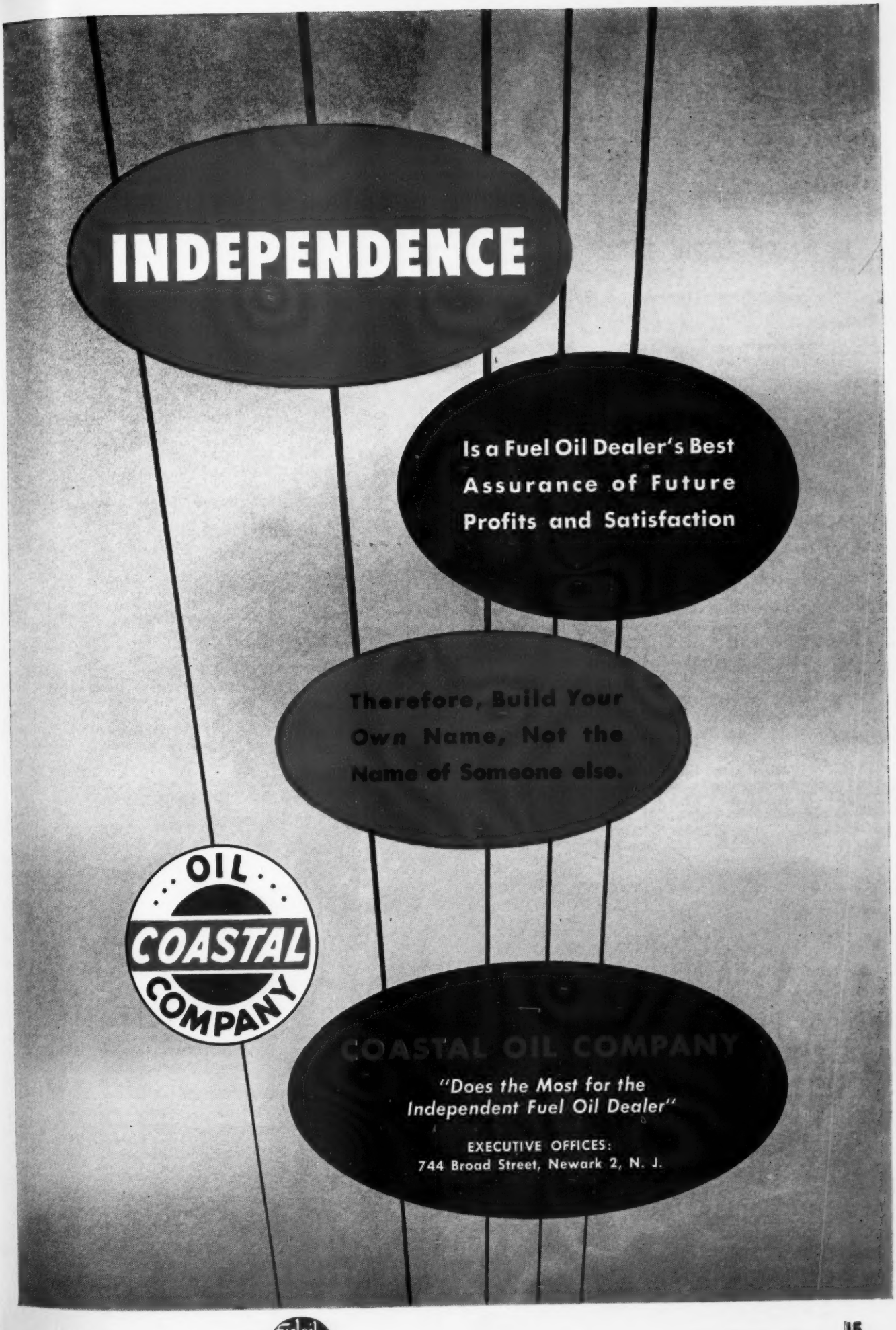
The new home market particularly of the speculative type is slowed down this year and this has hurt gas heating sales more than oilheating. In some areas, however, gas gets an increasing share of such builder business as it develops. In New England, the dealers estimate 40% of the speculative home market is gas heated compared with 33% two years ago, 6% five years ago.

In the Mid-Atlantic states, speculative builders are putting gas into 72% of their homes this year, compared with 59% two years ago, and 41% five years ago. In the Midwest, 98% of speculative homes are heating with gas, compared with 65% two years ago, and 52% five years ago. In the Pacific Northwest, 45% of speculative homes are going to gas, and there were very few a few years ago.

For the nation as a whole, the reports indicate that 71% of speculative home developments installed gas heat this year compared with 56% two years ago and 37% five years ago. This is obviously a tough competitive situation with oil heat, and the main reason, of course, is that gas heating equipment is considerably cheaper to install. It might be noted that oilheating has done very well to maintain its industry volume in the face of such strong defections to gas in the new home market.

Our final question in this study asked the reporting group if they now have a cooperative advertising program for oil heat. The percent was not significant, although high because too many were reporting from cities known to have campaigns.

(*Please turn to page* 138)


INDEPENDENCE
Is a Fuel Oil Dealer's Best Assurance of Future Profits and Satisfaction
Therefore, Build Your Own Name, Not the Name of Someone else.
OIL
COASTAL
COMPANY
COASTAL OIL COMPANY
"Does the Most for the Independent Fuel Oil Dealer"
EXECUTIVE OFFICES:
744 Broad Street, Newark 2, N. J.

Where is the new home Market?

	No. of Permits Issued	
	July 1957	7 Mos. 1957
ALABAMA	1,289	7,664
Birmingham area	498	2,821
Mobile area	280	1,779
Montgomery area	57	444
Nonmetropolitan areas	454	2,620
ARIZONA	1,385	8,985
Phoenix area	1,113	6,457
Nonmetropolitan areas	272	2,528
ARKANSAS	261	1,786
CALIFORNIA	17,543	106,893
Fresno area	170	1,510
Los Angeles area	5,375	50,075
Sacramento area	506	2,787
San Bernardino area	951	10,861
San Diego area	1,082	9,091
San Francisco-Oakland	6,904	15,953
San Jose area	1,152	6,944
Stockton area	79	1,109
Nonmetropolitan areas	1,324	8,563
COLORADO	1,160	7,601
Denver area	700	4,601
Nonmetropolitan areas	460	3,000
CONNECTICUT	1,632	8,736
Bridgeport area	148	1,011
Hartford area	265	1,707
New Haven area	1,082	5,179
Nonmetropolitan areas	1,082	5,179
DELAWARE	184	1,442
Wilmington area	177	1,400
Nonmetropolitan areas	7	42
DISTRICT OF COLUMBIA		
Washington, D.C.	199	2,168
Maryland suburbs*	1006	5,107
Virginia suburbs**	340	2,729
FLORIDA	6,365	37,798
Jacksonville area	274	2,552
Miami area	1,864	11,004
Orlando area	464	1,655
Tampa-St. Petersburg area	1,340	8,326
Nonmetropolitan areas	2,423	14,261
GEORGIA	1,288	8,676
Atlanta area	660	4,367
Columbus area	71	928
Savannah area	113	1,189
Nonmetropolitan areas	444	2,192
IDAHO	112	666
ILLINOIS	3,573	27,771
Chicago area (Does not include Ind. suburbs)	2,788	23,590
St. Louis area	114	396
Nonmetropolitan areas	671	3,785
INDIANA	1,539	8,202
Chicago suburbs	246	1,371
Fort Wayne area	83	403
Indianapolis area	535	2,547
South Bend area	108	715
Nonmetropolitan areas	567	3,106
IOWA	690	3,723
Davenport area	102	611
Des Moines area	133	706
Nonmetropolitan areas	455	2,406
KANSAS	638	4,693
Kansas City area	169	1,004
Wichita area	171	1,107
Topeka area	89	1,268
Nonmetropolitan areas	209	1,315

*Included in Maryland state total.
**Included in Virginia state total.

	No. of Permits Issued	
	July 1957	7 Mos. 1957
KENTUCKY	528	4,317
Cincinnati suburbs	81	293
Louisville area	355	2,809
Nonmetropolitan areas	92	1,215
LOUISIANA	1,060	6,297
Baton Rouge area	252	1,379
New Orleans area	401	2,791
Shreveport area	163	861
Nonmetropolitan areas	244	1,266
MAINE	92	666
MARYLAND	1,364	15,197
Baltimore area	81	8,016
Washington, D. C. suburbs	1,006	5,127
Nonmetropolitan areas	277	2,054
MASSACHUSETTS	1,488	9,948
Boston area	771	4,566
Springfield-Holyoke area	197	1,467
Worcester area	53	639
Nonmetropolitan areas	467	3,276
MICHIGAN	4,005	23,142
Detroit area	2,442	14,124
Flint area	271	1,332
Grand Rapids area	181	1,132
Nonmetropolitan areas	1,111	6,554
MINNESOTA	1,248	7,251
Minneapolis-St. Paul area	750	4,970
Nonmetropolitan areas	498	2,281
MISSISSIPPI	269	1,254
Jackson area	42	322
Nonmetropolitan areas	227	932
MISSOURI	1,433	7,264
Kansas City area	441	2,095
St. Louis area (Ill. suburbs listed under Ill.)	772	3,287
Nonmetropolitan areas	270	1,882
MONTANA	92	693
NEBRASKA	526	2,293
Lincoln area	66	442
Omaha area	404	1,427
Nonmetropolitan areas	56	424
NEVADA	181	1,790
NEW HAMPSHIRE	102	714
NEW JERSEY	2,419	17,017
Atlantic City area	64	335
New York City suburbs	1,393	10,160
Philadelphia suburbs	399	2,091
Nonmetropolitan areas	563	4,431
NEW MEXICO	597	3,296
NEW YORK	4,487	28,238
Albany, Schenectady, Troy	132	809
Buffalo area	730	4,123
New York City†	1,064	8,036
Suburbs of New York City	1,912	11,435
Rochester area	217	1,408
Nonmetropolitan areas	432	2,427
NORTH CAROLINA	832	5,253
Charlotte area	52	462
Greensboro-High Point area	104	802
Raleigh area	103	468
Nonmetropolitan areas	573	3,521
NORTH DAKOTA	171	736

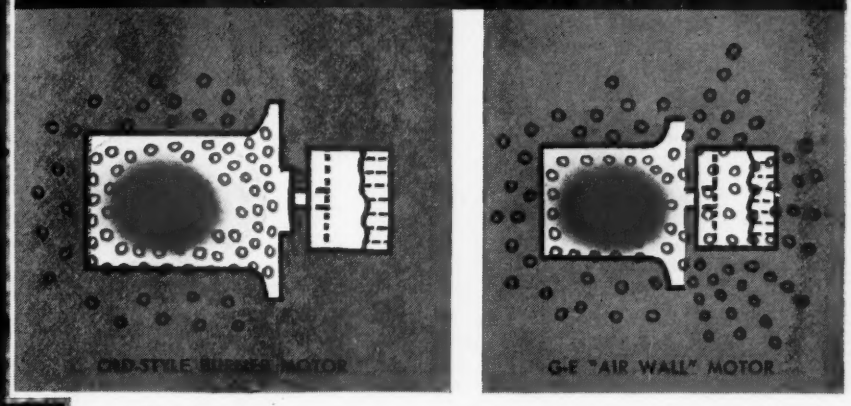
†Covers dwelling units actually started.

	No. of Permits Issued	
	July 1957	7 Mos. 1957
OHIO	4,098	23,952
Akron area	228	1,524
Cincinnati area	411	3,410
Cleveland area	995	5,896
Columbus area	660	3,059
Dayton area	268	2,207
Toledo area	182	1,178
Youngstown area	295	1,675
Nonmetropolitan areas	1,059	5,003
OKLAHOMA	536	3,103
Oklahoma City area	187	1,194
Tulsa area	98	496
Nonmetropolitan areas	251	1,413
OREGON	439	2,916
Portland area	145	1,594
Nonmetropolitan areas	194	1,322
PENNSYLVANIA	2,748	17,945
Allentown-Bethlehem area	170	999
Harrisburg area	107	636
Philadelphia area (See New Jersey for Jersey suburbs)	926	7,488
Pittsburgh area	1,097	5,716
Nonmetropolitan areas	448	3,106
RHODE ISLAND	245	1,416
Providence area	213	1,258
Nonmetropolitan areas	32	158
SOUTH CAROLINA	228	1,871
Charleston area	57	698
Nonmetropolitan areas	171	1,173
SOUTH DAKOTA	113	488
TENNESSEE	1,014	5,689
Chattanooga area	245	862
Knoxville area	214	1,096
Memphis area	277	1,994
Nashville area	147	873
Nonmetropolitan areas	131	864
TEXAS	5,168	34,613
Beaumont-Port Arthur area	132	1,057
Corpus Christi area	107	657
Dallas area	774	6,204
El Paso area	504	2,165
Fort Worth area	460	3,154
Houston area	636	7,820
San Antonio area	400	2,162
Nonmetropolitan areas	2,055	11,394
UTAH	382	3,537
Salt Lake City area	242	1,610
Nonmetropolitan areas	140	1,927
VERMONT	23	100
VIRGINIA	1,704	11,787
Portsmouth-Norfolk area	292	1,758
Richmond area	302	2,512
Roanoke area	98	719
Washington, D. C. suburbs	340	2,429
Nonmetropolitan areas	672	4,369
WASHINGTON	1,583	8,489
Seattle area	922	4,706
Spokane area	113	823
Tacoma area	170	906
Nonmetropolitan areas	378	2,055
WEST VIRGINIA	371	2,079
Charleston area	106	595
Nonmetropolitan areas	265	1,484
WISCONSIN	1,837	10,766
Madison area	116	714
Milwaukee area	1,119	5,995
Nonmetropolitan areas	602	4,057
WYOMING	90	444

SERVICE CALLS!

General Electric's oil burner motor with "Air-Wall" trips out less, lasts longer—cuts inventory 50% and makes installation easy

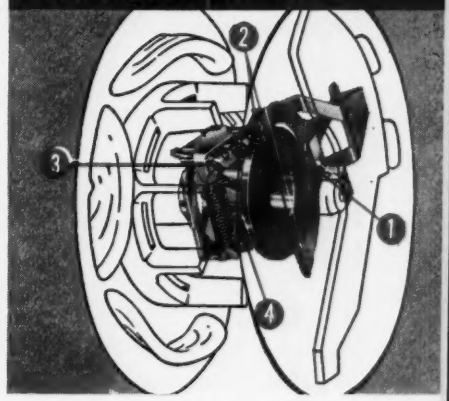
NOW you get positive heat removal . . .



Old Style oil burner motors get rid of heat slowly. This slow method of heat removal frequently causes trip-outs which require time-consuming service calls—waste your servicemen's time and cost you money.

General Electric's "Air-Wall" motor transmits heat swiftly. Trip-outs are rare even in hot, cramped quarters. An invisible "air-wall" stops entry of dirt. Motor meets all Underwriters' Laboratory requirements for totally enclosed designs.

Get longer switch life

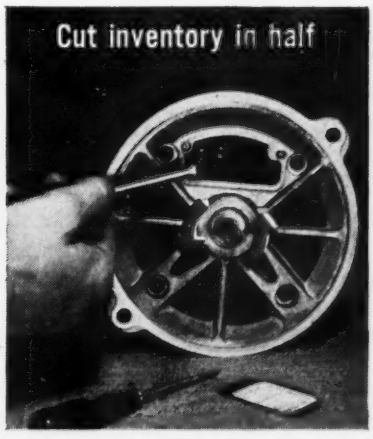


3½ Million Operations (equivalent to 100 years' use) have been obtained with G.E.'s wear-resistant switch. Features: 1. Knife-edge hinging, no pins; 2. Textolite* wear pads; 3. Silver contacts; 4. Snap-action.

Get longer lubrication life

4-Year Factory Lubrication practically eliminates reoiling nuisance. Specially designed lubrication system of General Electric's oil burner motor, with 50% more oil, continuously bathes all bearing surfaces with filtered oil.

Cut inventory in half



Less Inventory is required. All G-E burner motors feature interchangeable rotation. Servicemen can easily change any motor to get clockwise or counterclockwise rotation simply by switching leads. Only minimum service stocks are needed.

Get easy installation

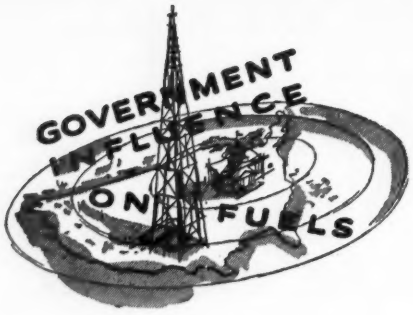
Easy Handling and installation are possible even in tight places because G-E motor is over 50% lighter than older designs. For example, the 1/12-hp motor weighs only 10 pounds, yet outperforms heavier motors.

TO GET THESE ADVANTAGES. . . Specify General Electric motors on your next heating equipment order.

GENERAL ELECTRIC COMPANY, SCHENECTADY 5, NEW YORK. 702-52

Registered Trade-mark of General Electric Company.

GENERAL ELECTRIC



by Milburn Petty

WASHINGTON — Now it is fueloil pricing and oilburner servicing that have come under the scrutiny of the Department of Justice.

Apparently, this investigation here was an offshoot of the grand jury probe launched last March by the DJ at Alexandria, Va., just across the Potomac, which was still under way late in October.

Early in the Alexandria inquiry the DJ attorneys indicated that they were interested in pricing and marketing of gasoline—but not fueloil.

So, it could have been that even then the DJ was reserving fueloil for a special investigation.

First word of the impending grand jury investigation of fueloil came with the filing of letters of authorization in federal court here.

DJ Authorizes Fueloil Probe

These letters, issued to two of DJ's antitrust attorneys—Robert Strange and William T. Collins—instructed them to investigate alleged antitrust law violations "by certain persons, firms, corporations, associations and their members, engaged in or having been engaged in the distribution, purchase and sale of fueloil for heating purposes in dwellings and places of business."

There was no limitation placed on the time or area to be covered in the inquiry, nor methods of investigation.

That was on September 30. The next day subpoenas began to be served on fueloil dealers in this area. By end of the week about a dozen had received them, along with the Oil Heat Institute for Greater Washington.

The subpoenas asked the dealers for their company officer lists and any letters or documents having to do with fueloil pricing or burner service contracts from January 1, 1954 to September, 1957. Copies of contracts with oil suppliers were asked for.

Each dealer was apparently selected as representative of his section of this area. Each sells fueloil, burners and service.

No major oil company received a subpoena among the first batch served.

The OHI chapter was asked for documents, bulletins, letters, etc., which contained any reference to fueloil pricing or service contracts. Earlier, FBI agents had visited the OHI office.

DJ Says 'Local' Probe Only

While the authority is broad enough for a nationwide probe of fueloil marketing, DJ officials insist that only "local" matters are involved.

But the DJ may be seeking a "pattern" in this area. And, if they feel that they are successful in getting "evidence" of this, they may widen the scope of their inquiry—particularly, if there is any chance—as they see it—of bringing in some of the major oil suppliers.

Right now, however, there is little or no indication of what the DJ is really after or hopes to establish by this grand jury probe.

Coal Seeks Gas Bill Change

Coal industry spokesmen plan to tell independent producers what it will take to win coal-state votes for the Harris Bill to free gas producers from utility-type federal controls.

If the coal people insist upon amendments subjecting industrial gas sales to price regulation by the Federal Power Commission, then neither the pipelines nor distributors are going to be happy.

What has brought the distributors into line supporting the Harris Bill is their hope that it will mean added gas supplies.

But, say the pipelines, if off-season, interruptible sales to industrial consumers are "priced out of the market" by FPC regulation then there will not be the volume needed to provide more gas for other consumers in the heating season.

So, backers of the Harris Gas Bill face several dilemmas.

Among the questions posed are:

Will coal-state votes be needed to pass a gas Bill?

If so, will the "price" (by way of amendments) demanded by the coal industry be too high to pay at the risk of splitting the gas industry—now virtually unified behind the Harris Bill, as it stands?

Only about two months remain—before Congress reconvenes—to determine answers to these questions.

Oil Import Curbs Pressed Hard

With R. B. Anderson, former Texas oil man and now Secretary of Treasury, succeeding to the role of "strong man" in Cabinet oil imports committee, the pressure has been turned on to make the "voluntary" program to hold down crude imports a success.

Action to prevent stepped-up imports of residual—and moves to nip in the bud any plans for bringing in quantities of light fueloil from foreign refineries—can be expected.

New Military Oil Cuts Seen

Increased outlays for the United States missile program, prompted by the Russian satellite, may mean further curtailment in the military's oil purchasing—to provide more dollars for missiles without going to Congress for increased appropriations.

This would mean underlifting of new contracts for jet fuel (containing distillate and kerosene), diesel fuel, and heavy fueloil used by the Navy.

Meanwhile, domestic oil companies —refiners and producers—are marshalling forces to fight the award of military oil contracts to the Caribbean Area, particularly for importation into this country.

Interest Shown in Oil Shale

Navy's plans to lease, for a long term, the oil shale facilities at Rifle, Colo., have aroused opposing interests.

Several qualified bidders, talking of spending millions, have cropped up.

Meanwhile, Senator O'Mahoney (D., Wyo.) and others believe the government should revive its own oil shale program, as a future source of much-needed diesel fuel.

Also, there are signs of interagency squabbles developing.

You get an advanced additive in premium-quality Atlantic Heating Oil

One of the most advanced of all heating oil additives gives Atlantic distributors a great *new* sales opportunity.

Atlantic research has combined this additive with the exclusive triple-refining process to provide a premium-quality heating oil which actually helps keep a burner clean as it heats, and which costs no more than ordinary heating oils.

This development is another example of how Atlantic works continuously to provide its distributors and the public with top-quality products.

Every Atlantic distributor can be assured that each gallon of Atlantic Heating Oil will have the maximum heating efficiency.

Because Atlantic Heating Oils are available at conveniently located pipe line or water terminals, distributors can also be assured of continuous, dependable supply.

If you want more information about the advantages of an Atlantic distributorship, call or write The Atlantic Refining Company at one of the terminals listed below.

TERMINALS AT:

Providence, R. I.	Trenton, N. J.	Lebanon, Pa.	Richmond, Va.
New Haven, Conn.	Gloucester, N. J.	Mechanicsburg, Pa.	Charlotte, N. C.
Albany, N. Y.	Bridgeton, N. J.	Northumberland, Pa.	Greensboro, N. C.
Binghamton, N. Y.	Boston, Mass.	Philadelphia, Pa.	Wilmington, N. C.
Buffalo, N. Y.	Akron, Ohio	Pittsburgh, Pa.	Spartanburg, S. C.
Elmira, N. Y.	Allentown, Pa.	Reading, Pa.	Albany, Ga.
Rochester, N. Y.	Altoona, Pa.	Williamsport, Pa.	Atlanta, Ga.
Syracuse, N. Y.	Exton, Pa.	Wilmington, Del.	Griffin, Ga.
Wayland, N. Y.	Greensburg, Pa.	Baltimore, Md.	Macon, Ga.
Newark, N. J.	Johnstown, Pa.	Salisbury, Md.	Savannah, Ga.
			Jacksonville, Fla.

ATLANTIC
HEATING OILS

RECTORSEAL

seals MORE joints per DOLLAR

Here's proof that Rectorseal gives you much more for your money. You not only get better, more dependable leakproof seals —but more of them from every can or tube of Rectorseal.

Here are the results of tests to determine the number of pipe joint threads that can be coated with Rectorseal and other LP gas compounds. Rectorseal coated ⅓ MORE joints than the nearest competitive brand; and 2⅓ times more than another brand.

Brand	Number of 2" pipe joints coated, per pint.
RECTORSEAL	448
Brand "A"	192
Brand "B"	224
Brand "C"	336

Start using Rectorseal now—be sure of leakproof joints, and get more seals per dollar for economy.

Rectorseal No. 2
—Dries fast
—Sets soft.

Rectorseal No. 5
—Dries slow
—Sets soft.

Both can be used for the same services. Specify your preference when writing for sample.

Write for Free Sample Today.
RECTORSEAL
2215 Commerce Street, Houston 2, Texas

RECTORSEAL®
THE POSITIVE LEAK PREVENTER

Names in the News

Will J. Chappell has been appointed to the newly-created position of general products sales manager, Bryant Manufacturing Co., Indianapolis, Ind. In his new post Chappell takes over sales supervision of all heating products manufactured by Bryant. Chappell became product sales manager for Bryant in 1956 after having held various sales positions with Timken Silent Automatic Co. and Scaife Co., over a period of 26 years.

Albert F. Johnson has been promoted to the position of product manager of central airconditioners and heat pumps, Gibson Refrigerator Co., Division of Hupp Corp., Greenville, Mich. As product manager he replaces *J. L. Johnson,* former vice-president and general sales manager, who has retired. Prior to joining Gibson in 1955, Johnson was sales engineer for Gulf Oil Co. in New York and for Carrier Corp. for 13 years in Syracuse, Cleveland, and Chicago.

W. W. Eaton has been appointed manager of the Domestic Oilburner division for Fram Corp., Providence, R. I. to accommodate expanding operations in that area. Eaton exercises additional duties as Industrial Division manager.

Richard B. Schmidt has been named sales promotion manager for Mueller Climatrol Division, Worthington Corp., Milwaukee, Wis. Schmidt joined the Mueller sales organization in 1947.

W. R. Huber has received a leave of absence as director of public relations, Gulf Oil Corp., Pittsburgh, to direct the petroleum industry's Centennial celebration in 1959. He will maintain offices at the American Petroleum Institute headquarters in New York City. *Augustus C. Long,* Texas Co., New York, is chairman of the API Committee on Centennial Program. Huber joined Gulf in 1935 as advertising and sales manager and has been associated with API Oil Information Committee activities since its inauguration in 1947.

Harry H. Falkingham has been named general manager, Heat Inc., Nashua, N. H., wholesale distributor, General Electric Co. automatic heating and cooling products. Falkingham has had experience in selling and business management with Williams Oil-O-Matic Division, Eureka Williams Corp., and with Air Conditioning Division, General Electric Co.

Sterling E. Alexander has been appointed director of sales, Milwaukee Valve, Milwaukee, Wis. He was formerly a sales specialist for York Corp. and had been with the Henry Valve Co. for 14 years.

Kenneth O. Ralphs has been named sales manager of the residential division of York-Shipley, Inc., York, Pa. Ralphs was formerly sales manager of the Timken Silent Automatic Heating & Cooling Division of the Scaife Co., Pittsburgh. New merchandising manager of York-Shipley is *Gordon M. Parker,* also formerly with Timken. In his new post, Parker will be responsible for launching an expanded advertising and sales promotion program.

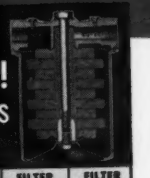
Ralphs

Parker

WE COMPARED ALL OF THE LEADING FUEL OIL FILTERS!

COMPARE! HERE ARE THE FACTS ABOUT FUEL OIL FILTERS!

Comparison of GENERAL FUEL OIL FILTERS with other Leading Makes



KEY FEATURES	GENERAL FILTER 1A-25A & 2A-700A	FILTER "A"	FILTER "B"	FILTER "C"	FILTER "E"	FILTER "F"	FILTER "S"
ALL IRON AND STEEL CONSTRUCTION No glass or soft metals. Nothing to crack, chip or wear out.	YES	NO	NO	YES	NO	NO	NO
CORROSION-PROOFED INSIDE AND OUTSIDE Raw porcelain-like, plastic finish on both inside and outside surfaces of filter body impervious to water, acids and oil.	YES	NO	YES	NO	NO	NO	NO
AIR VENTS ON BOTH INLET AND OUTLET Allows bleeding of lines without disconnecting filter.	YES	NO	NO	NO	YES	NO	NO
CHOICE OF INLET AND OUTLET SIZES Available either with standard ⅜" pipe openings, or with ½" or ¾" at slightly extra cost.	YES	NO	NO	YES	NO	NO	NO
CENTER BOLT TORQUE RESISTANCE OVER 300 IN-LBS. Improved design withstands maximum tightening without stripping of threads or distortion of bowl.	YES	YES	NO	YES	NO	YES	NO
NON-SWELLING, LEAKPROOF BUNA-N GASKETS Seat in special cupped rim of bowl for positive seal between cap and bowl. No messy leakage or fumes.	YES	NO	NO	NO	NO	NO	NO
DEPTH-TYPE WOOL FELT ELEMENT Oil cleaned through entire thickness of cartridge to center core—not just at outer surface. Greater dirt capacity before changing elements.	YES	YES	NO	NO	YES	NO	NO
PATENTED LINT REMOVAL Bonds all lint particles to wool felt preventing escape into fuel lines.	YES	NO	NO	NO	NO	NO	NO
MOISTURE AND CONDENSATION REMOVAL Wool felt removes moisture as well as dirt particles—only filtering medium effective against both.	YES	YES	NO	NO	YES	NO	NO
LARGE SUMP AREA For trapping and holding large quantities of water, scale, etc.	YES	YES	NO	NO	YES	YES	NO
TOTAL KEY FEATURES	10	4	1	3	4	2	0

GENERAL FUEL OIL FILTERS OFFER MORE KEY FEATURES . . . MORE BURNER PROTECTION . . . MORE CUSTOMER SATISFACTION!

GENERALS WIN HANDS DOWN!

MORE
Key Features

MORE
Oilburner Protection

MORE
Customer Satisfaction

Fuel Oil Filters

America's Original—
and Still FINEST!

HERE'S PROOF of superiority! This chart compares *all of the nationally-advertised, leading makes of fuel oil filters* FEATURE FOR FEATURE . . . shows exactly how each rates when it comes to the KEY FEATURES which determine performance — *and sales!*

All of the "name brands" are included; yet only GENERAL FUEL OIL FILTERS have all 10 of these key features. The "next best" filter has only 4 out of 10. *One make doesn't have a single one!*

These facts should be a graphic reminder to COMPARE before choosing any filter. As we've said all along, compare basic features and you'll stock and sell America's Original — and still the FINEST — General Fuel Oil Filters. Over 5 million sold!

Goodwill Builder! *CLEAN RIGHT* Soot Remover is the answer to soot-packed flues! Take a can along on your next service call. Destroys all soot swiftly and safely . . . up to ⅛" in 2-5 minutes.

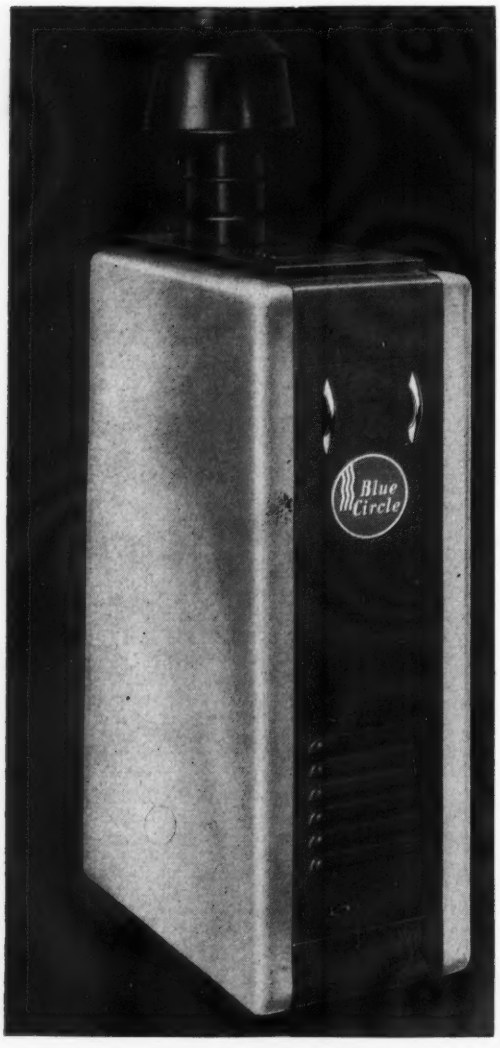
Here's Another Leader! *General Humidifier* is designed with service in mind. No float . . . nothing to clog! Scientifically humidifies—automatically.

GENERAL FILTERS, INC.

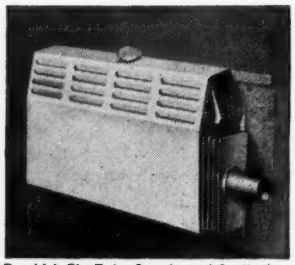
[illegible] Grand River Avenue [illegible] Detroit, Michigan

GF PRODUCTS

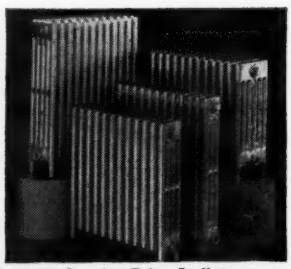
HOW DUNKIRK BLUE CIRCLE BOILERS AND RADIATION GIVE YOU A COMPLETE PROFIT PACKAGE



DUNKIRK Blue Circle



Dunkirk Fin-Tube Baseboard Radiation is packaged in ready-to-install sections. Requires minimum warehouse cubage.



Dunkirk Slender Tube Radiators are available in free standing and legless types in 3, 4, 5 and 6 tube sizes. Narrow widths and low heights are ideal for under window installations.

● The Dunkirk Line is the HEATING MAN'S LINE. There are boilers for every job . . . steam, and hot water. Sizes to fit every home. Flush or extended jackets . . . completely packaged with all accessories, factory-assembled and wired if you wish. All made of cast iron, the Lifetime Metal. Priced to get the business and pay worth while profits.

Cast iron and copper-aluminum radiation in complete lines of free standing and baseboard give you a complete system from a single source. Save ordering time, save inventory, save delivery time, save installation time all along the line.

The busy heating season is just ahead . . . it will pay you to get the profit making facts on the Dunkirk Blue Circle Line . . . the HEATING MAN'S LINE.

Write for Catalogs on Dunkirk Blue Circle Boilers, Radiation and Accessories

DUNKIRK RADIATOR CORP.

DUNKIRK, N. Y.

Member of The Institute of Boiler and Radiator Manufacturers

Fred Mulcahy has been named assistant sales manager in charge of products for the oilheating industry made by Delavan Manufacturing Co., West Des Moines, Ia. Formerly employed by National-U. S. Radiator Co., Mulcahy will head nozzle and accessory sales in both the United States and Canada.

Henry M. Haase, vice-president in charge of engineering and research for Borg-Warner Corp., Chicago, Ill., has been elected president and chief executive officer of the York Division of Borg-Warner at York, Pa. He will continue as a vice-president of Borg-Warner but will not direct, henceforth, the parent corporation's research and engineering activities.

Leo Graham recently joined Century Engineering Corp., Cedar Rapids, Iowa, as district sales manager for the area including parts of New York, New Jersey, and Pennsylvania. *Paul Saffell* became the company's district representative in the territory including: Texas, Oklahoma, Arkansas and part of Kansas.

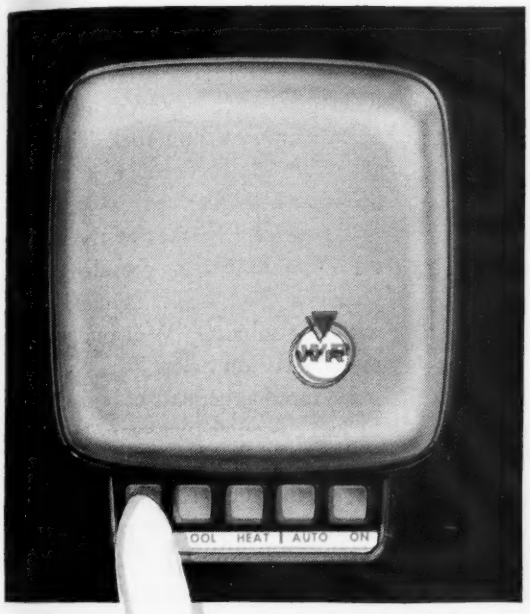
Phillips W. Berg has been appointed regional sales manager for Tuthill Pump Co., Chicago, Ill. He will have charge of the firm's sales organization in Indiana, Michigan, Ohio, western Pennsylvania and Kentucky.

John C. Hensel is the newly-appointed sales engineer for Thatcher Furnace Co., Garwood, N. J., to cover the northeastern New York area. Hensel succeeds *Tom Griffin,* who will be a Thatcher franchised dealer in Hudson, N. Y.

Howard E. Hoelter has been promoted to senior district representative in the Great Lakes District of the Oil Information Committee, American Petroleum Institute. He succeeds *Robert E. Harris* whose resignation was recently announced.

Straight out of TOMORROW
for your profit TODAY

. . . two *Fashion*-Styled Controls by WHITE-RODGERS

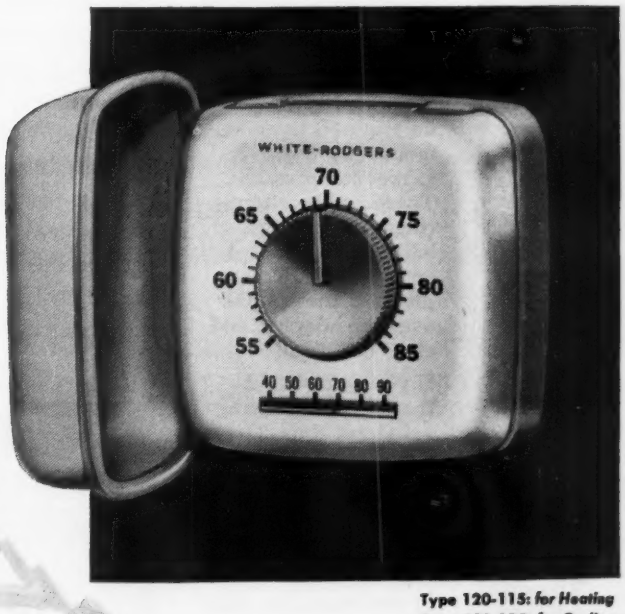


the fabulous new *Fashion* PUSHBUTTON heating-cooling thermostat

PushButton, year-'round temperature control is now combined with the powerful, sales-motivating styling of the Fashion. Sub-bases to fit any heating-cooling system . . . backed by the name that's famous for quality controls . . . White-Rodgers!

the incomparable *Fashion* THERMOSTAT

Styled to sell with the right shape . . . the right color . . . smart hinged cover, can be painted to match the wall, no dials peek through. Ideal for replacement of outmoded thermostats . . . inconspicuous baseplate covers any spots left by old-style controls.



Type 120-115: for Heating
Type 121-115: for Cooling
Type 125-115: Comb. Heat & Cool (SPDT)

Both thermostats are equipped with latest design dial-type adjustable resistor . . . can be set to match any primary control

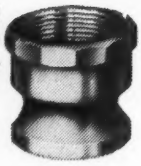
For full, profit-making details . . . contact your local White-Rodgers office — or write, wire or phone us today!

TEMPERATURE CONTROLS for MODERN COMFORT

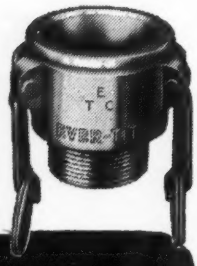
WR WHITE-RODGERS

ST. LOUIS 6, MISSOURI TORONTO 9, CANADA

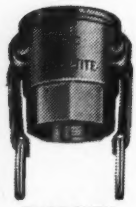
EVER-TITE
Standard Adapter
and Coupler



Your best buy is



EVER-TITE
-the best quality
QUICK COUPLINGS



EVER-TITE
Adapter and
Coupler

EVER-TITE
Shank Hose
Coupling

You save *time* and *money* when you use Ever-Tite Couplings because they speed-up deliveries, prevent leakage, and save wear on equipment.

Tightness is predetermined in manufacture by positive gasket compression. There are no sliding rings—no springs, ball bearings, snaps or lugs to fit. You just slip the coupler over the adapter, and close the handles.

If you want to get the *most* in coupling value get *Ever-Tite.* The Ever-Tite Trademark is a hallmark of dependability in fittings for the petroleum industry—proved by 18 years of pre-eminence. Ask your distributor now.

EVER-TITE COUPLING CO. INC.
254 West 54th Street
New York 19, N. Y.

Dust Plug

Dust Cap

EVER-TITE Dust Protectors

Every EVER-TITE saves time and money

Wisconsin Oil-Heat Institute Holds Annual Industry Rally

THE YEARLY oilheating rally of Wisconsin's OHI was held as a full day meeting at the Milwaukee Elks Club on September 20, with 90 fueloil marketers in attendance.

The morning session was a forum conducted by Charles E. Stoffel, president of Fuel Oil Heat, Inc., and past president of OHI of Wisconsin. The first panelist was Al Golnik, combustion engineer, Sinclair Refining Co., Chicago, and his topic was "What makes Oilburners tick?"

Golnik discussed first burner design, pointing out that any high pressure burner today has about the same accessories as another . . . they're quite standard and dependable. The real differences in efficiency come through the design of the burner casting or stamping, its combustion head, oil and air relationships. He particularly criticized a burner made with too much latitude, pointing out that some claim to operate from ½ gal. to 3 gph and do it well. At the higher feed rate, he believes, you have to choke the air down too tight and it soon clogs up through dust and dirt of the basement.

Most trouble with oilheating, however, comes from faulty installations usually due to ignorance of an unskilled dealer. He mentioned one large six-room ranch house with a new 83,000 Btu unit, and the owner dissatisfied while shivering and planning to switch fuels. The unit was much too small for the load. One bugaboo facing the industry is inadequate draft due to low chimneys. First floor installations with low roofs often have pulsations with any fuel. They must get more draft even if it means a booster fan on the stack.

The second speaker of the morning was Tim Loizeaux, president, T. R. Loizeaux Fuel Co., Plainfield, N. J., with the subject, "Will budget Plans increase fueloil Sales?"

He listed as benefits of budget plans: 1) less customer turnover; 2) reduced receivables; 3) increased working capital; 4) they help sell service contracts. He first used monthly payments with coal 20 years ago. "We're always ahead of the customer," he noted, "with 20% of our accounts on budget plans, we had $25,000 in this prepayment reserve on November 1 last year." During winter months his company puts a sticker on bills to non-budget customers which says, "You'll never have a fuel bill as high as this if you join our Fuel Club."

Loizeaux budget plans are insured against the death of the customer. This actually helps with collections, because the insurance lapses where an

Milwaukee Rally participants. Standing, from the left, Al Golnik, Tim Loizeaux, Ray Nathan and Fred Zwanzig; seated, Robert Gray and Lavern Schaetzel, president of the group.

Richard A. Wehrle and Harold Mottram constitute the secretariat of OHI of Wisconsin, Inc. Wehrle is the new assistant secretary, slated to become secretary on December 1. Mottram, who also heads Mottram Advertising Agency, has been secretary of the oilheating group for 23 years. Although retiring as secretary he will continue to handle the advertising of the Institute.

account is 30 days overdue, and the company can send a warning reminder on this point.

At the luncheon meeting the chairman was Lavern Schaetzel, president, Schaetzel Oil Co., Germantown, Wis., and also president of the OHI of Wisconsin, Inc.

The luncheon speaker was Robert Gray of FUELOIL & OIL HEAT, New York, who had some views on the future of oilheating as an industry. He urged stronger support by fueloil distributors of the Milwaukee cooperative advertising campaign for oil heat.

At the afternoon session the first participant was Fred Zwanzig, director of training, Heating & Cooling Division, The Heil Co. His subject was "Better equipment Service means more Sales." Comparing automatic heating to the automobile industry he noted that there were formerly many motor car manufacturers but most fell away because they couldn't provide adequate service. He compared this with the success of the telephone industry through superior service, which is why Americans depend on it so thoroughly. "In some parts of the world," he said, "it takes three to four hours to make a local call." The gas industry, he finds, knows the promo-

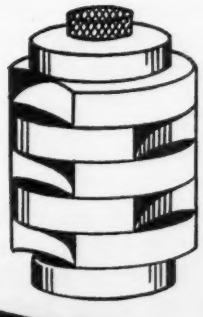
Recommend

FEDERAL FILTERS

for Bigger Profits..
Happier Customers

Provides uninterrupted trouble-free service!

The Federal's filter pockets trap contaminating impurities found in fuel oil and prevent clogging of burner nozzles. This means trouble-free furnace operation and the end of expensive service call-backs. One model handles all filtering jobs, whether pressure or gravity type. Can be mounted in practically any position . . . in a jiffy! Suggest the Federal Filter for faster sales—bigger profits.



Bonus Profits from CARTRIDGES!

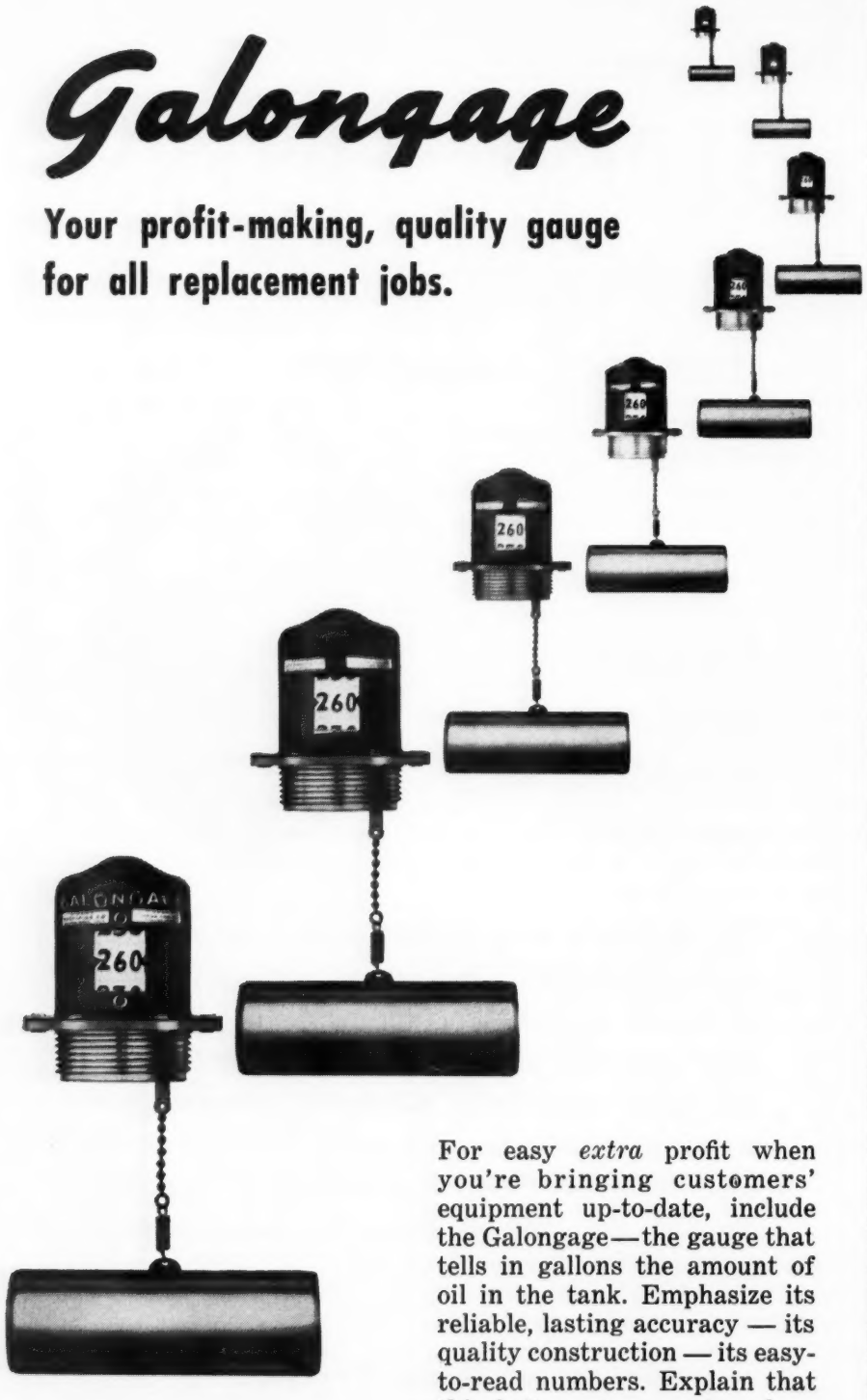
This unique 16-pocket filter element is in great demand and will bring countless repeat orders for extra profit! Easy to install.

NORWOOD PRODUCTS CO. • LUVERNE, MINN.

A division of A. R. WOOD MFG. CO., Luverne, Minn.

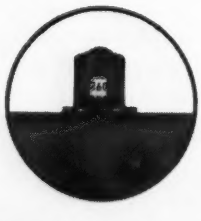
Galongage

Your profit-making, quality gauge for all replacement jobs.



For easy *extra* profit when you're bringing customers' equipment up-to-date, include the Galongage—the gauge that tells in gallons the amount of oil in the tank. Emphasize its reliable, lasting accuracy — its quality construction — its easy-to-read numbers. Explain that this better gauge costs only a little more — that it's the logical modern replacement for any other previously installed gauge.

In addition to your assured sales profit, you'll find the Galongage is easy to install, less expensive to ship, and packaged to fit easily into a serviceman's kit.



Galongage
is a product of
APPLIED MECHANICS COMPANY
381-385 CONGRESS ST., BOSTON 10, MASS.

tional value of good prompt service.

He told of one large national company that made a thorough analysis of the effect of customer dissatisfaction. This company found that each satisfied customer could be expected to make at least two additional purchases, while each unhappy customer caused the loss of four potential sales. Pointing to our industry's future, he said that if it can emphasize and deliver superior service, it has an excellent opportunity to capitalize on the 28½ million homes with obsolete heating that needs replacing.

The final speaker of the day was Ray Nathan, president, Ray Nathan Oil Co., Freeport, N. Y., and his topic, "How to stop Conversions to Gas." He described his operation as a "small" fueloil marketer, noting three million gallon volume, 12 employees; his equipment department last year put in 156 oilheating jobs, of which 103 were replacements of old oilheating, and 85 of those were sold by servicemen. His minimum replacement sale is $400.

Men are Important

He put most emphasis on the importance of the men in a company, especially good training and good pay. "Pay them enough," he said, "so they don't have to find it some other way." He criticized a company that would put a $65 man on a $12,000 truck and send him out to represent the company to the customers. "The customers don't see you, they see him . . . he has to make the whole impression."

He emphasized that your men must learn the trade, not the tricks of the trade. His men have clean uniforms every day. If they enter a home above the basement level, at the door they put on a pair of white cloth "booties" to protect the floors. Servicemen wear service stripes based on their years with the company. They're proud of them and the customers are impressed.

Nathan told of his activity in airconditioning, which is fruitful. The strongest sales resistance is cost. One prospect screamed at a $1,400 quotation until Nathan reminded him that he buys a $3,000 automobile and swaps it every other year, where the airconditioning purchase is "for life."

NEW 1958 CHEVROLET TRUCKS WITH NEW HUSTLE! NEW MUSCLE! NEW STYLE!

Just look at all they offer that's new and better . . . and you'll see why these new Chevies are the fleetest, sturdiest, handsomest dollar-savers yet! Meet Chevrolet for '58!

NEW MEDIUM-DUTY VIKINGS

Hardy Vikings roll in with nine brand-new models, offering new cab-to-rear-axle dimensions for improved semi-trailer, dump, stake and van-type operations. Options available boost GVW ratings all the way to 21,000 lbs. And you get traditional Chevrolet economy in the industry's most popular 6's and in V8's packing up to 175 h.p.

NEW HEAVY-DUTY SPARTANS

The robust Spartans make hauling history with the revolutionary 230-h.p. Workmaster V8 with Wedge-Head design. The combustion chambers are located in the cylinder block rather than in the cylinder head. Here's maximum power, less wear than ever. It's featured on 90 and 100 Series trucks as are sturdy cast-spoke wheels and an 18,000-lb. rear axle. Look over Task-Force 58 at your Chevrolet dealer's. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

CHEVROLET

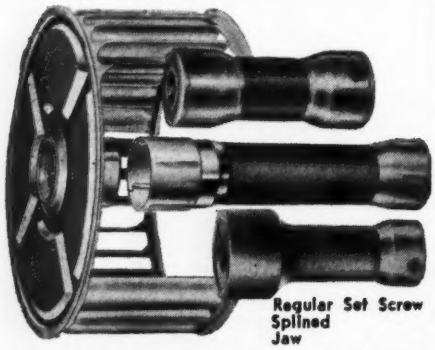
SEE THE LATEST EDITIONS OF THE "BIG WHEEL" IN TRUCKS—1958 CHEVROLET TASK•FORCE TRUCKS

QUALITY is our business ..without *any* compromise

***AND ONLY* Guardian**

GIVES YOU ALL THREE —

1. FLEXIBLE COUPLINGS



Regular Set Screw
Splined
Jaw

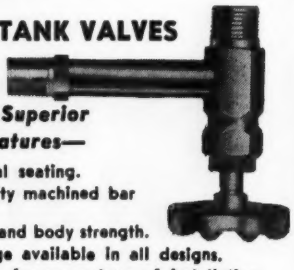
Only Guardian gives you these features—

- **ROLL SPINNING—Exclusive process joins all three components at one time—while in final operating alignment.**
- **BRAIDED RUBBER—Ground to absolute true concentricity. Furnished in BUNA-N TUBE and NEOPRENE COVER. Lateral and angular alignment requirements fully met.**
- **ONE-PIECE DESIGN—Minimizes assembly and handling costs. Made to exact lengths required.**

Over 5,000,000 Guardian couplings are on original equipment. This is your assurance of highest quality and universal acceptance in the field.

2. OIL TANK VALVES

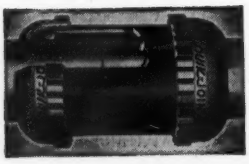
No. 1910 B



Check These Superior Guardian Features—

- **Metal-to-metal seating.**
- **Highest quality machined bar stock.**
- **Greater wall and body strength.**
- **Fusible linkage available in all designs.**
- **Valve designs for every type of installation.**

3. QUIK JOINT



Steel compression fittings for connecting steel pipe.

Patent No. 2,685,460

- **Eliminates threading of pipe.**
- **Decreases cathodic corrosion and electrolysis.**
- **Guaranteed for pressure up to 2000 P.S.I.**
- **Allows 7° angular deflection.**
- **U.L. approved for oil and gas.**

Write for free descriptive literature.

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PRODUCTS CORP.
COUPLING DIVISION

Dept. F-117 1215 East Second Street
MICHIGAN CITY, INDIANA

Airconditioning Benefits shown by John E. Haines at UCLA climate Symposium

AT A SYMPOSIUM on "Designing the indoor Climate," held recently at UCLA, John E. Haines, vice-president, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., and past president of the American Society of Heating and Air Conditioning Engineers, spoke emphasizing the benefits of year-'round air conditioning.

Haines opened by presenting some challenging figures—in 1956 less than 10% of non-residential buildings constructed or remodeled had complete year-'round air conditioning, while less than one-third of them had any form of cooling.

He went on to demonstrate that improved human performance as a result of cooling comfort far outweighs installation and operating costs. Just a few examples of improved human performance—a utilities company boosted efficiency by 51% upon airconditioning its drafting room; government stenographers' output rose 24%, and a hosiery plant chalked up a 29% increase in production.

Economic Advantages

Further advantages brought by airconditioning include reduced personnel turnover, better employees and tenants, increased comfort for customers and guests, and reduced cleaning costs.

Haines gave a series of statistics to support his thesis that complete year-'round airconditioning accounts for only a small increase in over-all building cost and maintenance, percentage-wise. These statistics further proved his point that through an increase in operating efficiency, the installation would in a sense pay for itself.

In the case of a typical new industrial building the added cost of owning and operating a complete year-'round airconditioning system operating 10 hours per day would be only 1% of the total cost, while installation in an existing industrial building would be 1.5%. For existing office buildings the figure is only 1%; for new ones only .8% of the total cost.

New school buildings, completely

It pays to use

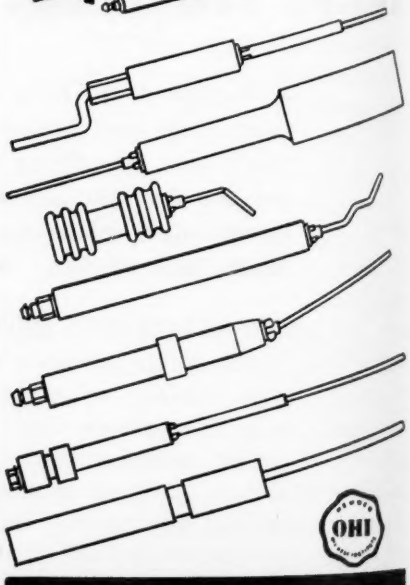
Genuine Factory Replacements

Sparktrodes

OVER the last twenty-five years scores of oil burner manufacturers have bought millions of electrode assemblies from us for their original equipment. When you order SPARKTRODES from your Jobber, therefore, you are assured of getting genuine factory replacements.

Wherever you are, there's a SPARKTRODES Jobber near you. We back him with the greatest variety of assembly designs, insulators, bus bars, cable and fittings available from a single source.

Sparktrodes



DIELECTRIC
PRODUCTS COMPANY, INC.
Jersey City New Jersey

Sales Representatives in 31 States and Canada
Authorized Jobbers • Coast-to-Coast

One Call...That's All!

MONCRIEF

gives you Everything you need for Better Heating- and Cooling-Installations!

● Whatever you need — Gas, Oil or Coal Furnaces (Basement, Hiboy, Counterflow or Horizontal); Air Conditioning Units; Gas Conversion Burners or Oil Conversion Burners; Gas Unit Heaters; Furnace Pipe and Fittings; or Prefab' Plenum Chambers — there's nothing like being able to place your order with one 'phone call, and then expect speedy service.

That's the advantage you enjoy, when you deal with your Moncrief Wholesaler!

And when you order Moncrief, you know that whatever you order will be built right, as well as priced right, because it is manufactured by heating experts with a background of more than 60 years of experience.

Today, your dollars are buying bigger at your Moncrief Wholesaler's, because Moncrief has been able to overcome rising costs through constant modernization of both manufacturing plants and production methods.

So, if you want the excellence of *years ahead* design, heavy construction and service-free operation, all at exceptionally competitive prices — and if you want the convenience of being able to order whatever you need, whenever you need it, without the penalty of a heavy inventory — *call* your Moncrief Wholesaler, today!

Winter Air Conditioner with enameled Return Air Cabinet (an accessory). A modern Basement-Type Unit!

Oil Winter Air Conditioner. Burner and Refractory Firebox are installed and all interior wiring is done at the factory!

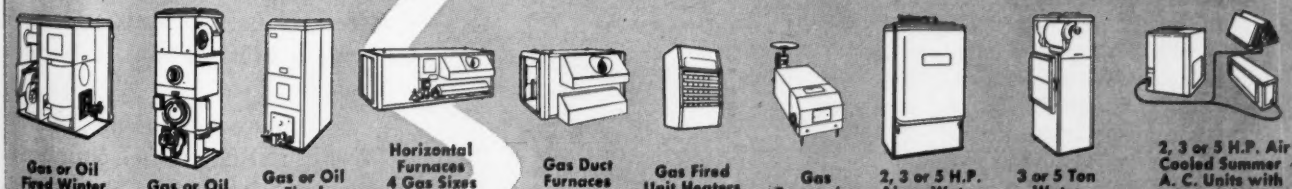
Gas Counterflow Unit with front Panels removed. Connection of the gas line, electricity and ducts completes the installation!

New MONCRIEF FURNACES

YEARS AHEAD in Design . . . SENSATIONALLY LOW in Price!

Pick the Type that suits you Best!

Winter Air Conditioners and Counterflow Units . . .
Gas Fired: 75,000, 100,000, 125,000 and 150,000 Btu . . .
Oil Fired: 78,400 and 112,000 Btu! Heavily Constructed!
Completely Assembled and Wired . . . Oil as well as Gas!
Approved for Close Clearances! Adaptable for Cooling!
Advanced in Styling! Surprisingly Low in Price!



Gas or Oil Fired Winter A. C. Units

Gas or Oil Fired Utility and Counterflow Winter A. C. Units

Gas or Oil Fired Gravity Furnaces

Horizontal Furnaces 4 Gas Sizes 4 Oil Sizes

Gas Duct Furnaces 4 Sizes

Gas Fired Unit Heaters

Gas Conversion Burners

2, 3 or 5 H.P. Air or Water Cooled Gas or Oil Fired Year 'Round A. C. Units

3 or 5 Ton Water Cooled Summer A. C. Units

2, 3 or 5 H.P. Air Cooled Summer A. C. Units with choice of "V" (Upflow) or "Flat" (Horizontal Flow) Cooling Coils

THE HENRY FURNACE COMPANY • Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF — FURNACE PIPE AND FITTINGS

Dependable heating
begins with the wiring...
CHESTER
plasticord-plasticote
WIRES and CABLES
including
Flexible Steel Conduit
TW Building Wire
Non-Metallic Sheathed Cable
Appliance, Instrument Wire

Oil Burner Ignition Cable for damp locations — special construction resists deterioration due to oil, grease, grit. This Chester oil burner ignition cable is UL approved.

POLYETHYLENE INSULATION
VINYL PLASTIC
STRANDED COPPER CONDUCTOR

Braided or Jacketed Thermostat Cable — multi-conductor wire for temperature control. Features flexible Vinyl jacket or waxed cotton overbraid for trouble-free circuits.

SEMI-RIGID VINYL PLASTIC
SOLID COPPER CONDUCTOR
FLEXIBLE VINYL JACKET OR WAXED COTTON OVERBRAID

Armored Bushed Cable —available in standard wire sizes both solid and stranded in single, two, three and four conductors. Armored lead cable furnished in standard wire sizes.

GALVANIZED STEEL ARMOR
ANTI-SHORT BUSHING
WAXED CRAFT PAPER
VINYL PLASTIC OR RUBBER INSULATION

Super-rugged Chester Insulations resist Oil, Grease, Water, Grime—

Chester Plasticote and Plasticord coatings withstand severe environmental conditions... add years to wiring life. The smooth pliability of these durable Chester conductors makes them easier working, faster to install. For faster installations and improved wiring performance, connect it with Chester! All wire and cable constructions *exceed* service requirements. Call or write for wire samples and bulletins today.

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CABLE CORP.
20 HILL STREET, CHESTER, NEW YORK
A Subsidiary of Miami Copper Company

airconditioned, operating nine months a year in a temperate zone, would have 2.8% added to their cost. A 'round-the-clock airconditioning system in the patients' area of a new hospital would add 1.4% to the total cost. Such minimal figures also apply to apartment houses, stores, hotels, and homes.

Haines concluded by predicting that in the future the majority of buildings constructed primarily for human inhabitance will be serviced by year-'round airconditioning.

Board Members named by Oil-Heat Institute

AT THE RECENT MEETING of the Board of Directors, Oil-Heat Institute of America, Inc., in Hot Springs, Va., the following were elected to the board:

Manufacturer Division: Robert Andler, Electrol Burner Mfg. Co.; D. A. Campbell, Eclipse Fuel Engr. Co.; J. Eubanks, V & E Products, Inc.; John Hancock, Marietta Metal Products Corp.; H. L. Mandelburg, Manville Boiler Co.; H. McClure, Kewanee Boiler Div., American-Standard; H. B. Rohrer, Herco Oil Burner Corp.; G. A. Taylor, Bethlehem Foundry & Machine Co.; and W. D. Wood, Timken Silent Automatic Div., Scaife Co.

Accessory Division: E. B. Frame, Monarch Mfg. Works; R. W. Hundley, Wm. Steinen Mfg. Co.; F. Weldon, Perfex Div., General Controls Co.; and K. L. Wilson, Minneapolis-Honeywell Regulator Co.

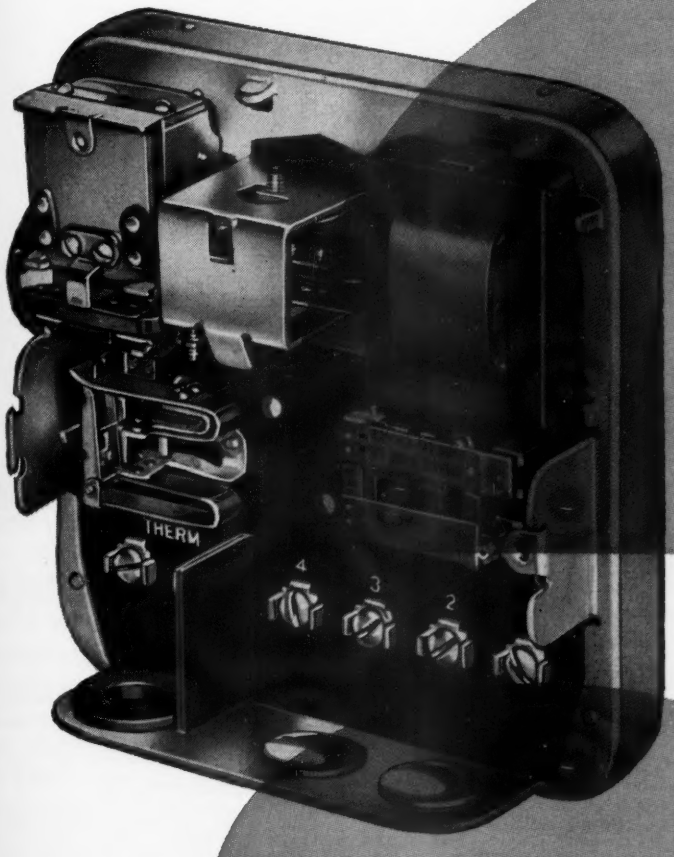
William Bohn, Preferred Utilities Mfg. Co., was elected a member of the executive committee to replace George Hochstein, The Heil Co., who resigned because another member of his company, Milton Jordan, is also on the committee.

Two groups are working on the OHI Label plan. Rolly Hertel, chairman of the Standards Steering Committee, has appointed John Olsen, Nu-Way Corp., chairman for writing the Installation Standard. He will be assisted by William Gaskell, Bryant; Carl Schlentner, National-U. S.; and D. H. Bottrill, OHI.

A committee of the Distribution Di-

what oil burner control system do you prefer?

The Perfex burner primary line by General Controls is America's only complete line. Choose from the only manufacturer to make all three—stack-mounted, two-piece or PerfXray.



MATCH THESE FEATURES AGAINST ORDINARY PRIMARIES

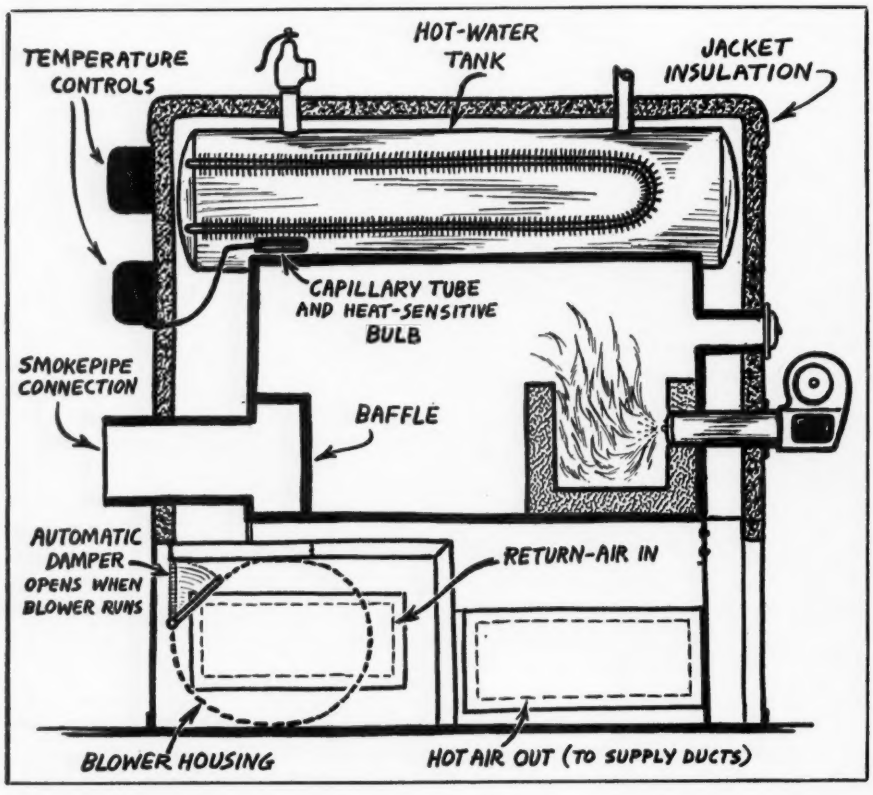
1) Constant, intermittent ignition; recycling, non-recycling and line voltage models available
2) Carbon friction block for reliability, permanent adjustment
3) No leveling required
4) Hum-free relay, insulated circuits
5) Simple wiring plan, protected while wiring
6) Safety timer compensated for ambient temperature
7) Fewer moving parts, plated against corrosion
8) Fully guaranteed, Underwriters' Laboratory approved

G C **make your next installation...**

Sell WATERAIR — the Warm Air Furnace with Domestic Hot Water!

You'll make extra profits, and add to your fueloil gallonage, with each WATERAIR warm air furnace you install. The WATERAIR means 2-way profits for you—you can give your customer the finest warm air heating installation, and you'll sell approximately 250 extra gallons of fueloil during the year, for the domestic hot water load. You'll be surprised at WATERAIR's low stack temperatures—425° to 450° gross. And with WATERAIR's 30 to 40 gallon tanks, you can guarantee plenty of year-round domestic hot water!

HERE'S HOW WATERAIR WORKS:



Sketch shows what's inside a Challenger model Waterair summer-winter warm-air furnace. When the hot-water tank needs heat, it gets it from two finned heat pick-up tubes. U-shaped, one shows in the drawing. Actually the furnace contains two, one on each side of the hot-water tank. These finned tubes receive heat from air as hot as 350°F., and have enough surface to give them the heat-exchange equivalent of 135 sq. ft. of hot-water radiation. Though the tubes are heated by 350°F. air when the tank needs heat, and when the circulating blower is not running, the maximum temperature of warm-air for the supply ducts of the heating system is about 170°F.

Get the full WATERAIR Story!

Be sure to read the feature article "The Hot Water Furnace", pages 53-55, August 1957 Issue, FUELOIL & OIL HEAT. And write us now for full details on how WATERAIR can boost your sales and profits!

WATERAIR COMPANY
15 Winchester Street Medford, Mass.

vision under the co-chairmanship of T. R. Loizeaux and C. Everett Elliot will set up a plan for procedures at the dealer level.

The complete label plan will be presented for OHI Board approval at its next meeting scheduled for January 15-17 in Milwaukee.

The tentative schedule calls for a Dealer Management Conference on the 15th; Section and Committee meetings the following day; and the Board of Directors meeting on the final day.

Cleveland forms Better Heating-Cooling Council

FORMATION of the Cleveland Better Heating-Cooling Council was announced recently following a kick-off meeting of more than 100 dealers, wholesalers and manufacturers' representatives.

The purpose of the group is to promote the sale of hot water and steam heating systems in the Cleveland area. While the new Council is independently financed and managed, its promotional campaign will be dove-tailed with the nationwide activities of the Better Heating-Cooling Council in New York.

Newly-elected president of the Cleveland Council is Walter W. Lige who said that the organization was proud to be the first city group to affilite with the national Better Heating-Cooling Council.

Other Cleveland officers are Keith D. Clotz, Spohn Heating & Ventilating Co., vice-president; George Kelly, McDonnell & Miller, vice-president; A. C. Gleason, Crane Co., treasurer; Mrs. Wade Rapprich, Ohio Pump Service Co., secretary.

The board of directors includes the officers plus Harold Burens, Burens Heating & Ventilating Co.; R. J. Cleary, Rex Plumbing Supply; S. H. Givelber, Reliance Heating & Air Conditioning Co.; R. G. Harrison, National-U. S. Radiator Corp.; H. C. Hausmann, Welker Supply Co.; W. Jewett, Vulcan Radiator Co.; J. Kramer, Ohio Sanitary; George Palmer, American-Standard; Earl Tindall, E. L. Tindall Heating Co.; Austin Vanderhof, Warren Webster

all-purpose relay!

The R847 above is being installed to handle a 22 amp motor load. Designed for use with a sensitive low voltage controlling instrument. R847A models include a transformer. The B model is used with an external transformer. The R447, not shown, is for use with a line voltage controlled with a separate power supply. Both the R447 and R847 are heavy duty relays.

Unbelievable, what a single relay will do—just check these specifications

SPST or DPST switching action. SPST rating: 22 amp full load, 100 amp locked rotor at 230 volts. DPST rating: 16 amp per pole full load, 72 amp locked rotor at 230 volts. • R847A has 24-volt coil and transformer in 115, 208 or 230 volts. • R847B has same relay with 24-volt coil: power is furnished by remote transformer. • R447A has no transformer, but has a 115, 208 or 230-volt pull-in coil available on the relay.

Call or write today for full details

Honeywell

First in Controls

fuel oil & oilheat

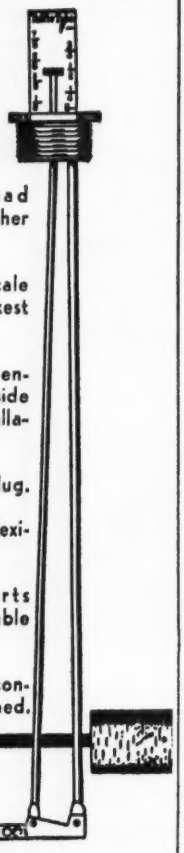
More PROFIT this Winter

Tattle-Tale
TRADEMARK

•D 7 0 C•

OIL TANK GAUGE
for 1½" and 2" openings

7 WAYS Better



1. An easy-to-read molded all-weather plastic top.
2. Plainly visible scale in even the darkest places.
3. Designed and engineered for inside or outside installations.
4. Heavy die-cast plug.
5. SPRING STEEL flexible float rod.
6. All moving parts hinged on durable brass pivots.
7. Overall rugged construction guaranteed.

Mr. Dealer

If you do not stock this trouble-free low priced gauge write for sample. This fast-selling gauge has exclusive features not found in many of the higher priced gauges that will mean volume business for you.

WRITE FOR OUR LOW PRICES

homeward Products Inc.

3420 S. W. 9th St.
DES MOINES, IOWA

Co.; and Horace E. Wetzel, Smith & Oby Co.

The Cleveland Council is the first in a chain of city councils expected to be set up shortly throughout the country in cooperation with the national BHC. Other groups in leading cities are reported ready to announce councils in their communities.

API Chicago Meeting will be streamlined

THE PROGRAM for the 37th annual meeting of the American Petroleum Institute will be streamlined and condensed. Sessions will be held at the Conrad Hilton, Palmer House and Congress Hotels in Chicago starting November 11 and closing on the 13th a day earlier than originally planned.

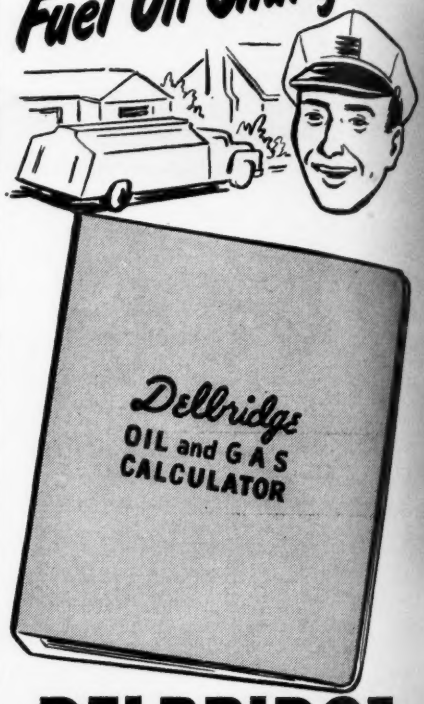
Top leaders of government, industry, business and commerce will be speakers at the meeting, among them being the following: Fred A. Seaton, Secretary of the Interior; Lyndon B. Johnson, Senate majority leader; Philip D. Reed, General Electric Co.; Charlton H. Lyons, Mid-Continent Oil and Gas Association; Frank M. Porter, API president; and A. L. Nickerson, Socony Mobil Oil Co.

The Division of Marketing will hold an open meeting of the General Committee on Tuesday afternoon with Dwight T. Colley presiding. Colley is API's vice-president for Marketing and vice-president, The Atlantic Refining Co., Philadelphia, Pa. This meeting will consist of an open business session and the election of members of the General Committee of the Division of Market, plus various other matters.

The Fuel Oil Committee will convene on Monday afternoon. On Monday morning the Public-Relations session, to be presided over by H. S. M. Burns, chairman, Public-Relations Committee, API board of directors, and president, Shell Oil Co., N. Y., will feature the Oil Information Committee report. M. S. Hauser, Ohio Oil Co., Findlay, O., chairman of the Oil Information Committee will present the report.

On Wednesday afternoon the Committee on Petroleum Statistics will hold an open session. Albert J. McIntosh, Socony Oil Co., N. Y. and Serge

Fastest, Easiest Way to Figure Fuel Oil Charges!



DELBRIDGE
Oil & Gas Calculator

Stop figuring fuel oil charges the old-fashioned, long-hand way! No more errors—no more dissatisfied customers!

Figure fuel oil charges fast—easily—accurately—with the DELBRIDGE Oil & Gas Calculator! Total amount of sale is *pre-calculated* for you without laborious long-hand figuring and errors—simple as finding a phone number!

Covers prices from 5¢ to 35¢ per gallon by steps of 1/10¢. Shows gallonage from 1 to 250 gallons by steps of 1 gallon—then to 5,000 gallons in easy steps.

Durable, long-lasting leatherette metal-ring binder. Only 5¼" x 6½"—fits easily in coat pocket. Guaranteed accurate by Lloyd's of London. Only $5.00 each.

Try the DELBRIDGE Oil & Gas Calculator for 10 days . . . *without obligation!* Prove to yourself how it can save time . . . cut down costly errors. Mail coupon for FREE 10-day trial. *Send no money!*

FREE TRIAL COUPON!

DELBRIDGE CALCULATING SYSTEMS, INC.
2502 Sutton Ave., St. Louis 17, Missouri

Send the DELBRIDGE Oil & Gas Calculator... *without obligation!* We will approve your invoice for $5.00 (plus postage) within 10 days if we decide to keep the Calculator.

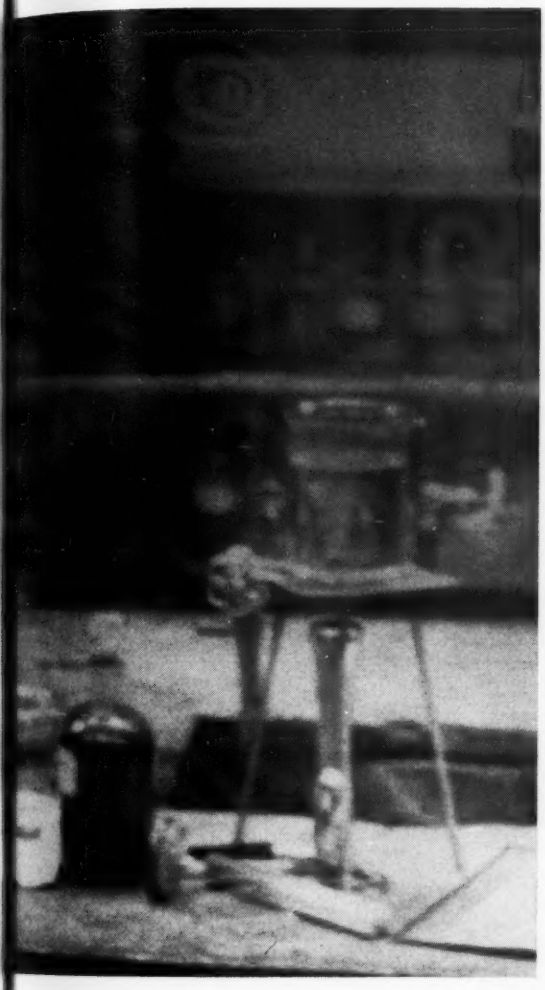
Name.....Title.....

Company.....

Address.....

City.....Zone...State.....

CUTS SERVICE CALLS!



TECHNICAL EXPLANATION

Each of the several metals alloyed in the MAGNA-BAR has a purpose. One of the metals—magnesium—being highly alkaline, destroys catalysts, thought to be peroxides and hydroperoxides. This blocks a chain reaction that generally results in polymerization and co-polymerization of oil molecules. These polymers are the resinous compounds that result in the sludge, resin and varnish that clog the oil lines, the filter screen and the burner nozzle itself. By stopping the chain reaction, there is a drastic reduction of resin and sludge —in the order of 100 to 1. This results in almost complete elimination of service trouble in the burner and combustion chamber—including fouling of the starting electrodes. It destroys the corrosive acids that normally eat out the bottom of the steel tank—by direct neutralization and by the electrolytic action through the condensate. The potential as an anode is about 1.7 volts above the iron in the tank. Thus the MAGNA-BAR prevents the tank from rusting by discharging hydrogen ions electrically. The other metals present in the MAGNA-BAR are to help maintain its chemical activity. There is enough alkaline reserve to last 3 years in the average tank.

EASY TO INSTALL!

MAGNA-BAR is a bar of special alkaline metal—the only product of its kind—which lies on the bottom of the tank (where the damaging acid forms). It is attached by a long wire to the filler cap. It is easy to install and has no moving parts. MAGNA-BAR is not like a powder or liquid additive that needs frequent replenishing. (If your customers have any additives in their oil now—fine! MAGNA-BAR can only help them perform more efficiently.)

Your customers are getting acquainted with MAGNA-BAR through extensive newspaper and magazine advertising. They'll probably soon be asking you about it. A good customer relations move—a move that would also save *you* time and money—might be to give it free of charge to all your contract holders . . . or you might sell it at the advertised price. You make the decision . . . but in either case, decide to order a substantial quantity of MAGNA-BARS *now!*

LIBERAL DISCOUNTS TO THE TRADE

Magna-Bar

JOHNS RESEARCH LABS. Dept. F-11
MIDDLESEX, N. J.

Please rush ..... MAGNA-BARS.

☐ Please send full information on how MAGNA-BAR will help my customers.

Please PRINT your:

Name .....

Address .....

City ..... Zone ..... State .....

Liberal discounts to the trade

Fresh from big success in 1957, undisputed leader in booming swimming pool industry announces dynamic new program for 1958.

DISTRIBUTORS
now being selected for new 1958 Motel and Home

Esther Williams
Swimming Pool Program—
NOW IN MOTION!

Big Profit Opportunities
right now in booming *home* and *motel* pool markets. Pool heaters and advanced design, all-concrete, simple construction bring *year-round* volume sales.

Coast to Coast NBC-TV program on 200 stations right now to sell pools during lush Fall selling season.

Millions spent on 1957 program in LIFE, BETTER HOMES & GARDENS, TV, RADIO, etc., provide springboard for more millions planned in 1958.

New Motel Program offers wide-open profit opportunities starting at once with fast sales to leads from our trade advertising and mailings.

$25,000 to $250,000 Yearly Profit potential from five-figure investment in self-liquidating inventory.

Our New Year Started Labor Day! Distributors being appointed at rapid rate. ACT NOW!

ESTHER WILLIAMS SWIMMING POOLS
5 Court Street, White Plains, N. Y.

Guaranteed by Good Housekeeping — REPLACEMENT OR A REFUND OF MONEY IF NOT AS ADVERTISED THEREIN

You'll recognize Esther Williams Swimming Pools by their unique advanced design, pure sparkling water and custom tailored beauty . . . at homes, motels, clubs and model houses everywhere.

B. Jurenuv, assistant to the president and chief economist, Continental Oil Co., N. Y., will be among those speaking. McIntosh will render a forecast of petroleum demand in 1958.

Home Builders are ready for January Convention

THREE CHICAGO convention centers, the Conrad Hilton and Sherman hotels and the Coliseum, will house the 14th annual convention and exposition of the National Association of Home Builders next January 19-23.

Leaders from business, industry and government will join members of the home building industry in panel discussions, forums, workshop sessions, and dramatizations. During the five-day meeting financing, merchandising, building techniques and community facilities will be discussed. Hotel reservations can be made by sending the advance registration fee ($15 for men, $10 for women) to Paul S. Van Auken, Convention & Exposition Director, NAHB, 140 S. Dearborn, Chicago 3, Ill.

Dodge Report says August residential Contracts up

BOTH RESIDENTIAL and non-residential building contracts in August registered gains over the same month of 1956, but heavy engineering contracts were down enough to pull contracts for future construction down 5% according to F. W. Dodge Corp., New York City.

Residential building contracts in August totaled $1,283,513,000, an increase of 5%. A substantial gain in contracts for multi-unit dwellings more than offset the 1% decline reported on one- and two-family houses.

Non-residential building was valued at $1,008,265,000, an increase of 8% over August 1956. Heavy engineering dropped 34% to total $526,188,000.

As for the year to date compared to a year ago: residential building contracts are valued at $9,053,764,000, down 1%, and represent 692,151 dwelling units, down 7%; non-residential contracts total $7,939,670,000, up 3%; and heavy engineering totaled, $5,683,218,000, an increase of 7%.

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. . . END SUCTION LOSS NOW!

WITH MASTER-CRAFT DUST BAGS, FILTER UNITS, DISPOSABLE FILTERS

Here is the most complete and comprehensive Standard stock to fit all makes and models of Industrial Vacuum Cleaners. Any type . . . any size . . . or any quantity that you may require can be shipped from stock the same day your order arrives.

The MASTER-CRAFT line of Dust Bags, Filter Units and Disposable Filters represent the most advanced methods of dust separation and cleaning efficiency available, developed against a background of practical experience in design, workmanship and manufacturing facilities second to none in the field today.

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Jobbers and Distributors inquiries invited.

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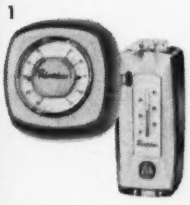
stands guard at 4 vital central heating points!

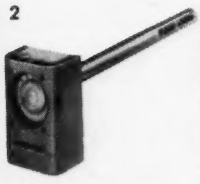
1



WALL THERMOSTATS TR series..."fashion-right at home" in any decor, detachable ring for painting...easy-to-read double dial eliminates squinting. Snap-action switch is completely enclosed to seal out foreign particles. Features adjustable heat anticipation. Requires no leveling to install!

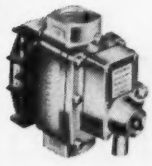
DT series...low cost, yet highly reliable. Attractive bronze finish, fixed heat anticipation.

2



COMBINATION FAN & LIMIT (FAL 40D) Compact, easy-to-install... fan and limit terminals separated to allow extra space for quicker, easier wiring. Limit switch features gold-plated contacts for positive operation, may be used to control line, low voltage or millivolt circuits. Fan and limit control settings adjustable, approx. 20° fixed limit differential.

3



MODEL HC-E A new, hi-capacity gas heating control, actually 2 controls in one...automatic pilot with thermo-magnetic, 100% gas shut-off, built-in pilot filter and adjustment and a SILENT, positive, snap-action gas valve... includes limit switch terminals.

4

#9 PILOT AND NEW SUPER-CLAD THERMOCOUPLE An unbeatable combination for positive, safe operation. #9 Pilot features flame-retaining double hood to provide improved main burner ignition. New Robertshaw-Grayson Super-Clad Thermocouple generates greater electrical output... eliminates service calls caused by needless outages—yet costs no more!

To discover exactly how and why dependable Robertshaw Central Heating Controls can save costly service calls...protect profits...contact your Robertshaw-Grayson representative today!

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CONTROLS COMPANY

Mr. Controls

GRAYSON CONTROLS DIVISION

Long Beach, California

A COMPLETE SELECTION OF *DEPENDABLE* CENTRAL HEATING CONTROLS!

Esso, Gilbert & Barker develop new Oilburner

A SEVEN-YEAR RESEARCH and testing program has resulted in a new oilburner which promises substantial savings in fuel consumption. The burner has been developed by Esso Standard Oil Co. and the Gilbert and Barker Manufacturing Co.

Before production gets underway on a large scale, the burners will be sales tested in Esso's New England sales division. Advertising in the Boston area promises that savings will be guaranteed in writing.

Esso Standard will estimate the savings a homeowner can expect with the new burner to replace his old one. If the actual saving, adjusted for degree-day variation, falls short of the prediction Esso will reimburse the homeowner in cash for the difference.

The two companies estimate that the burner can reduce fuel bills up to 24%. It operates with a high combustion efficiency at a firing rate as low as two-fifths of a gallon per hour.

Engineers claim that the Esso burner can operate at a zero smoke level and a high CO_2 percentage over its entire range of firing rates. A new design for mixing the fuel and primary air gives more complete atomization to insure cleaner burning of fuel.

The oilburner is of the low-pressure atomizing type, featuring a different type of nozzle and a different metering system.

Petroleum Education Group names College Commission

AN EFFORT to establish a petroleum division at the New York City Community college will be made by the Petroleum Education Foundation, New York.

Named to act on a commission to further this project are the following: John F. Albright, Socony Mobil Oil Co.; B. C. Astrup, Shell Oil Co.; William J. Bennett, Industrial Bank of Commerce; Robert Gray, FUELOIL & OIL HEAT; Harry B. Hilts, Empire State Petroleum Association; Eugene F. McCabe, Tidewater Associated Oil Co.; Fred Meeder, Richfield Oil Corp.; Roy Birckey, Esso Standard Oil Co.; Samuel Rosenwasser, Gasoline Merchants of Brooklyn; Anthony J. Sbare, Sbare Automatic Heat, Inc.; Henry Schwartz, Paragon Oil Co.; John Harper, Harper Oil Co.; Edward Heeg, New York Oil Heating Association, Inc.; L. T. White, Cities Service Petroleum, Inc.; and Harold Layman, H & L Corp.

Louisiana Utility buys Servel Airconditioning

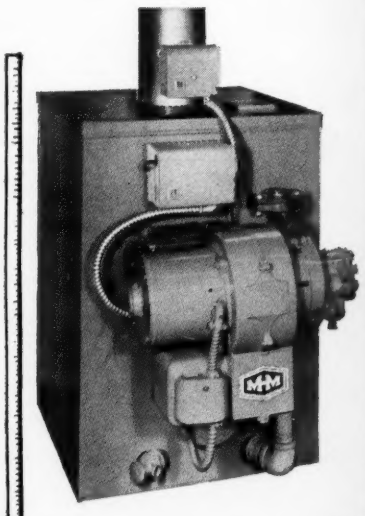
STOCKHOLDERS approved the sale of the Airconditioning Division, Servel, Inc., Evansville, Ind., to the Arkansas Louisiana Gas Co., Shreveport, La.

The Arkla Air Conditioning Corp., a Delaware corporation and a subsidiary of Arkansas Louisiana will manufacture and sell year 'round gas airconditioning equipment. The units will be branded Arkla-Servel and will carry the trademarks, "Sun Valley" and "All-Year."

they said it couldn't be done!

but Mt. Hawley has accomplished the "impossible". Here, for your inspection, is

29"--



The HYDROLO "29"

NEW CONVENIENT SIZE
Perfect for any under-counter, closet, utility room or basement installation.

TOP PERFORMANCE
Performs equal to boilers *four* times its size.

NEW SMART APPEARANCE
It's 29 inches low. It's square. Its new color will harmonize anywhere. Extended jacket optional.

TOP QUALITY CONSTRUCTION
ASME constructed with a *full* wet base. Completely water jacketed.

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Compare... then buy!

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Gentlemen:
The Hydrolo 29 looks good to me, too. Please send more information.

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CASE HISTORY NO. 2

Home Cooling by oil Men

Elliott-Lewis as an airconditioning Distributor favors oilheating Dealers as Outlets

by William J. Stein

"THE FUELOIL DEALER who is not in the airconditioning business is as backward as the coal dealer who refused to go into the oil business 25 years ago." That's the opinion expressed by H. R. MacAvoy, sales manager of the residential airconditioning division, Elliott-Lewis Corp., Philadelphia. This organization has been in the fueloil, heating and airconditioning business since 1932. At present it continues to be a significant factor in this business in the Greater Philadelphia Area.

Until recent months one phase of its business concentrated on the wholesale distribution of room airconditioners, while another division emphasized commercial, industrial and some residential installations. But in the home, installation costs appeared too high for the homeowner; hence, volume was lacking in this specific area. Problems arose relating to the installation of water lines or to the placing of the compressor and condenser outside the house while the air handling equipment went into the cellar. These problems involved more handling, more work, costlier units and a definite knowledge of refrigeration procedures.

Recently, Fedders-Quigan Corp. designed its "Adaptomatic" residential air-cooled unit in both two and three tons capacity. Elliott-Lewis began to distribute this line in April 1957. T. H. Lewis, Jr., vice-president and general sales manager of Elliott-Lewis, recognized the tremendous potential for immediate and future sales and profit for dealers and placed MacAvoy in charge of a program to set up dealers and encourage sales of these units among residential users.

What happened? From April 1, 1957 through its first cooling season Elliott-Lewis sold more than 300 units. This meant that Elliott-Lewis' dealers installed 300 home airconditioners in small residences during the tail-end of the cooling season. To MacAvoy this was the beginning of an upward trend.

Although the greater number of Elliott-Lewis' dealers are also in the fueloil business, several dealers are only heating contractors. There are also a few general appliance dealers in this group. Although these are the facts, MacAvoy has some specific opinions as to who has an advantage in the residential type market.

MacAvoy notes that, "There is no one more logical to sell airconditioning than the person who satisfactorily installed the customer's heating system, supplies him with oil and services the equipment. . . . Obviously, the customer has confidence in the dealer. Otherwise, he would not continue to buy the dealer's services. . . . Of course, the dealer has to make it known that he is in the residential airconditioning business. . . . The fact that he installed the heating system, or is even servicing the burner properly, removes the mystery of airconditioning for the customer. . . . It's not like dealing with a stranger. It's more like talking a problem over with an old friend."

What does Elliott-Lewis offer its dealers? First, there is the equipment. Next, Elliott-Lewis offers its dealers the tops in assistance. On the first few individual jobs it will survey the job, size the ductwork, suggest the layout and help with pricing and installation. Or, if a dealer prefers, MacAvoy arranges for a contractor to do several of the first few installations for a dealer while the dealer watches and learns.

During the winter an eight week training session is conducted. This course meets for three hours a night, two nights a week. This is a regular factory distributor school. The course covers residential airconditioning from stem to stern: customer education, surveying, installation and servicing. This is no different from 25 years ago when fueloil dealers attended similar schools to learn the burner business.

The future of Elliott-Lewis and the dealers in this business depends upon the complete satisfaction of the customers. This makes it necessary to keep close reins on all aspects during the formative stages. Customer camplaints always are checked promptly. With few exceptions, a minor adjustment usually settles the matter.

A problem of real concern with some dealers is "overselling" the qualities of airconditioning. The staff at Elliott-Lewis cautions its dealers that

Elliott-Lewis Corp., prominent fueloil-oilheating and airconditioning dealer in Philadelphia for 25 years, also acts as a distributor for a number of sub-dealers. The company favors oilheating dealers as airconditioning outlets, not only because of "built-in" prospect lists among their fueloil customers, but also because so often a homeowner has more confidence in what he's told about cooling equipment by the "friend" who makes possible his comfort and worry-free oilheating during the winter months.

R. H. MacAvoy

they sell comfort, not a temperature differential. On very hot and very humid days, the airconditioner will certainly make the home more comfortable by reducing the humidity and slightly lowering the temperature. To accomplish both, in such instance, would require an over-sized unit. Not only would this increase costs, but it would reduce the operating efficiency of the equipment. The customer has to be advised that the machinery in airconditioning is made to operate 24 hours a day.

Seventy-five per cent of the dealers handle their own "start-ups" and service their own installations. About 25% turn their "start-ups" and service over to Elliott-Lewis. This service is carried for $35 for the first year and $20 a year for the remaining years. However, to the fueloil dealer interested in the oil account, the idea of handling the service himself is, obviously, to his advantage.

A source of trouble to any organization that installs mechanical equipment is a breakdown of any integral part of some mechanism that can be repaired only by a specialist who is thoroughly acquainted with the device and who has the proper testing equipment, repair parts and facilities. Elliott-Lewis provides this service for its dealers. Its parts department serves as a local reservoir that can save the time and cost involved in writing and shipping equipment to a manufacturer and waiting for a reply and return shipment.

In its "hermetic" repair shop Elliott-Lewis can repair the sealed units in airconditioners that otherwise would have to be returned to the factory. To the dealer this means that he has a local place to which he can go to have a major repair made, pick up a part or get some advice or information on a repair problem. It further allows the dealer's service department to concentrate its energies on outside calls. It is questionable whether it would be economically feasible for a dealer to carry a complete inventory of repair parts and to maintain personnel and equipment to repair all breakdowns.

The dealer who works with the builder customer is especially desirable. He pioneers airconditioning as a basic element in housing, just as we accept central heating. To MacAvoy the prospects in the new home area are fabulous. He reasons that 25 years ago the new home customer sought automatic heat as a new feature. Then as the years passed, there came the fancy kitchens, recreation rooms and the additional luxuries. Now the inquiries are directed toward airconditioning.

Recently, one of the dealers, Adkins and D'Andrea, installed a Fedders systems in two model houses constructed by Charles Litman and Son in the Springlake Farm development, Warminster, Pa. These are homes that were made to sell for about $15,000. The complete installation was made for $750. This price was possible because of the simple design of the home, coupled with the fact that the installation was made during the process of construction.

Litman explained that he was using this as a sales incentive and planned to furnish airconditioning to his customers at cost. He noted that in a previous project of $35,000 homes, 70% of his customers specified airconditioning. Potential buyers visiting the model homes at Springlake Farms did not ask for airconditioning because

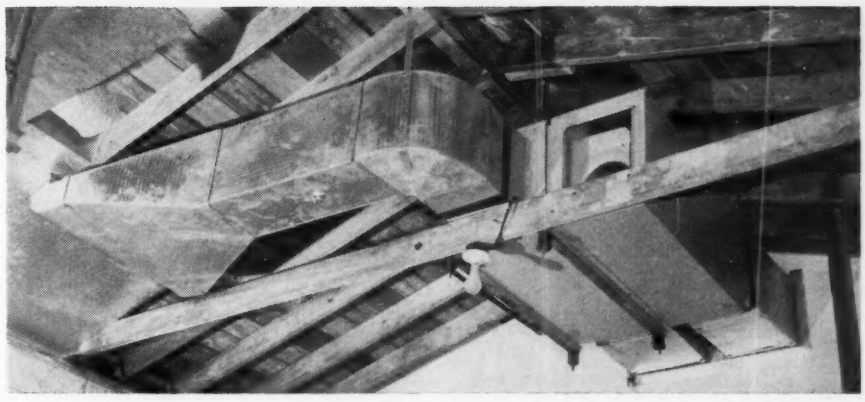
Irwin Litman, builder, and MacAvoy stand in front of new home advertising airconditioning. Model home is equipped with a three ton Fedders unit.

they felt it was only for luxury homes. Once having overcome the initial misconception, these buyers showed a strong desire for cooling.

Since the offer was made, two out of eight homes were sold with cooling. All the remaining six expressed a desire for it, but preferred to delay the purchase for financial reasons. Also earlier purchasers of these homes said they'd aircondition their places next summer after seeing the effect in the model homes during some of the hot summer days.

Irwin Litman was quite definite when he said that in a few years cooling will be standard equipment. "Anyone in the building line who overlooks that is making a mistake." When the added cost is taken in as part of the mortgage, the cost of the installation will be amortized at the rate of from $2 to $3 a month, after a down payment of about $200. "When this is compared with the cost of two room coolers for the bedrooms," Litman said, "a buyer would be foolish to turn down this offer."

It was interesting to hear Litman say that after the project was first advertised, other builders inquired about this installation. Prospective customers further stimulated builders and real estate agencies by discussing this feature when visiting other model homes in the area. To the builders this interest is more than a perfunctory matter. They feel that the coming season will see these inquiries turn into orders.



The Valley Supply Co., Paoli, Pa., an Elliott-Lewis Corp. dealer, installed this Fedders Adaptomatic, Model 730 AB, a 3 HP unit. It is hung from the garage rafters. As shown the exhaust discharge goes out under the eaves of the garage and the intake, also shown, comes directly from the garage area. This equipment was installed in the spring of 1957 and has been doing a fine job.

MacAvoy looks forward to this business as a means of rounding out the off-season. Installations going into new homes can be done at a much lower cost. The design of the building can be made to accommodate both heating and cooling. Installations could be made while work is in progress, hence, the building is "open" and finishing can be done by regular carpenters with no added costs to the airconditioning job.

This work need not be seasonal. If it can flatten out the bump of the usual seasonal trend, it would have the effect of distributing overhead costs through the year, plus maintaining a more balanced employment and operating level.

What does it take to do airconditioning work in small residences? To the fueloil dealer, who is doing heating work, it presents no problem. MacAvoy noted that once the dealer gets one or two jobs installed he is off on his own. This is especially true if he has a cooperative manufacturer or distributor within easy call for advice, parts, service and leads.

MacAvoy feels that airconditioning should be more profitable than heating to a fueloil dealer. He does not have to place himself in the position of cutting his profit on a job to get an oil account. Having an oil and heating business to supplement airconditioning is very helpful. He already has a list of potential customers among his oil accounts. He has the added advantage of being "in the door." Probably all his customers are interested in airconditioning. The desire for the cooling exists.

The best prospect is the one who has a room airconditioner. He is like the child who has tasted a small piece of candy and now wants more.

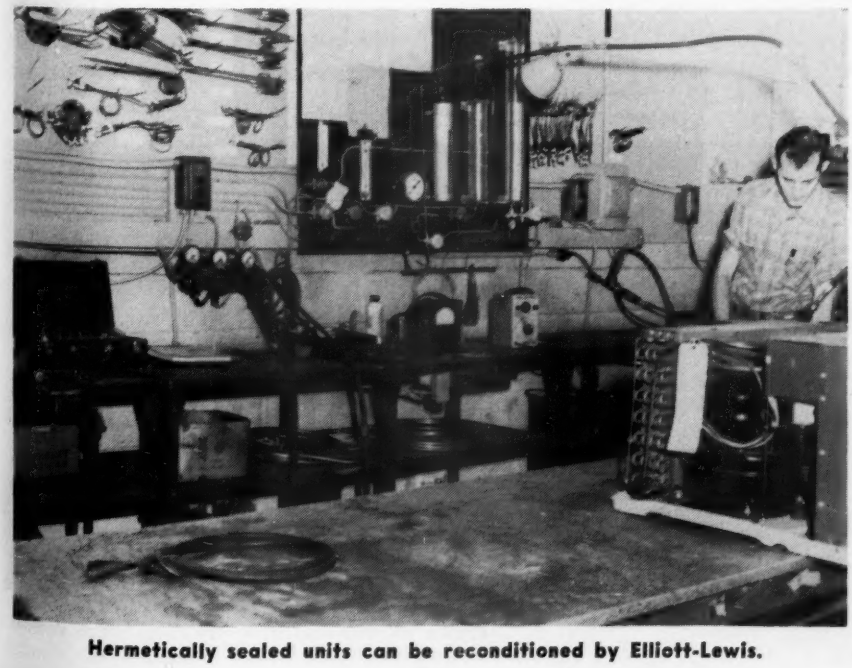
MacAvoy summarized his thoughts by saying that the dealer has four principles to consider:

1. Get a certain amount of basic know-how and develop self confidence in his installations.

2. Become associated with a reputable manufacturer and distributor who can offer assistance with installation and service problems.

3. Tell his fueloil customers that he has airconditioning to offer.

4. Overcome, by good selling, the exaggerated opinion that airconditioning a home is too costly.



Hermetically sealed units can be reconditioned by Elliott-Lewis.

Duct Systems may be more common, but

Pipes will cool You, too

by V. M. Douglas

FOR MANY YEARS we have had the struggle between "warm air" and "wet heat." The two types of heating employ different trades, "sheet metal workers," and "pipefitters." Their skills have little in common. These references do not bring out the fact that in either case the profession of heating engineering is involved, and the common goal is human comfort.

Until comparatively recent years, the business enemies working for a common cause, were able to go their separate ways, to a large extent. The primary interest was producing and distributing heat, and each could manage quite well without the other.

The warm air heating man has been associated with products constructed of sheet metal. It was rolled, bent, or shaped, and crimped or riveted, to produce a means of heating air and conducting it to rooms or areas where a higher temperature was required.

The wet heat exponent has heated water in a boiler, and transmitted hot water, steam, or vapor through pipes to containers with large radiating surfaces, located in spaces requiring heat.

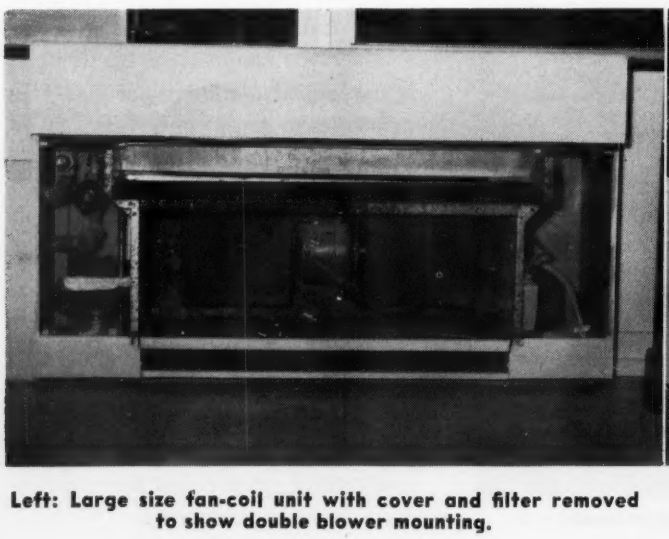
"East is East and West is West, and ne'er the twain shall meet." Right or wrong, it has been quoted many times. In like manner, for many years the warm air man and the wet heat man seemed to be unalterably opposed. There seemed to be no common ground. Warm air heating was one thing and the use of boilers and radiators or convectors was another. Each had its place, its price, its followers. They did not belong in the same house or building.

Comparatively recently a new factor has been injected into the scheme of things called comfort. Many have decided that misery brought about by excessive heat during the summer season, is no more necessary than suffering with the cold during the winter months. Airconditioning is rapidly changing its status from that of a luxury to a necessity. As with heating, cooling and humidification have reached a stage where conditioned air is recognized as an important influence in our economy, as well as contributing to our comfort and health.

More and more the sheet metal men and pipefitters are having their heads bumped together. In airconditioning, gasses, liquids and pressures call for the pipefitter. He produces the cold, or to be more correct, takes the heat out of the air, but his heavy and relatively small pipes are not the logical means of distributing the cold air. The sheet metal man takes over with blowers, ducts, filters, air diffusers and other items sold and installed in his trade.

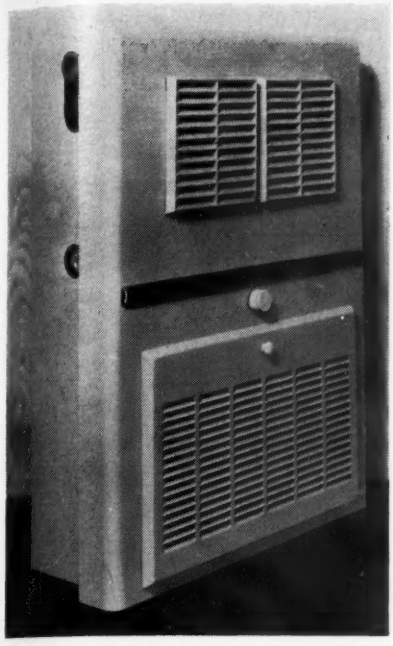
Without complete data available regarding the origins of ideas, it is apparent that the wet heat engineers began to think in terms of air which could be heated, cooled, correctly humidified and distributed, without calling on the sheet metal man. Several manufacturers have announced new products which retain the virtues claimed for wet heat, but also afford users the advantages which for years have been associated with warm air.

Early this year, the Chicago branch office of National-U. S. Radiator Corp. was contacted with a request for details concerning their Capitolaire all-season airconditioners. F. L. (Les) Brown responded and displayed several installations, both completed and in various stages of completion. Having been engaged in the sale of warm air heating for several years, it would be reasonable to suppose that he would require considerable self-adjustment in his thinking to advocate wet heat. He explained that, as a warm air heating salesman, he had entertained a wholesome respect for wet heat, and now that complete airconditioning may be had, not only on new installations, but



Left: Large size fan-coil unit with cover and filter removed to show double blower mounting.

Right: F. L. Brown of National-U. S. Chicago office demonstrates convenience of removing drip pan.



A National-U. S. fan-coil unit home room size, ready for installation. Here are some features: Pipe connections at left ½" IPS; air discharge grilles at top will snap into position to discharge air to right, left, up or down; lower grille snaps in or out of position without tools to remove filter for cleaning or replacement, same opening provides access to motor and blower; center control knob regulates speed of the blower motor.

by adding to existing boiler jobs, he thinks he has opportunities unlimited.

To eliminate a lot of study of technical folders, including oilburning boiler units, fan-coil units and compressor-chiller-condenser units, Brown was asked: "To make a long story as brief as possible, will you give a dozen advantages or features which you think will provide your customers with a system incorporating convenience, comfort and health, in keeping with the best in modern standards?" Brown's response, excluding remarks in parentheses, was as follows:

1. Year-round comfort control on a room to room basis. Each room is separately "zoned" without increase in the cost of the system. (When questioned on "without increase," he replied that actually it should be said "without appreciable increase," but in proportion to the cost of a complete system for heating and cooling, the slight extra cost of provisions for zone control would be negligible.)

2. Each room can have its own heating-cooling thermostat. (Interrupted again about the word "can," Brown explained that, as presently offered, the thermostat is optional.)

3. Air quantities in each room can be varied as desired. (A variable speed motor, manually controlled, provides any desired quantity of air.)

4. Broad range of year-round comfort conditions. (This brought forth the added information that as much as 25% of the air introduced into the room could be outside-air.)

5. Super quiet system. No air noises. No ducts to transmit noise of compression to the living zone.

6. Pipes which carry the water, hot or cooled, are very small in comparison with duct sizes necessary with air systems.

7. Small, compact, inconspicuous, heating-cooling units do the job of distributing the heat or cold. (A dimension sheet disclosed that a fan-coil unit for an average room in a home measures 20-15/16" high, 16½" wide, and projects into the room 1⅝". This small unit incorporates a seamless copper coil with aluminum fins, an electric motor 1/30 hp, an aluminum blower, an insulated drain pan, an air filter, glass wool and felt insulation.)

8. Humidity control is accomplished easily at each unit, and as each room requires.

9. Ideally suited to homes with existing hot water or steam systems. (This sounds casual, but there was no intent to convey the opinion that installing a chiller unit and substituting fan-coil units for standard convectors, would be a minor operation.)

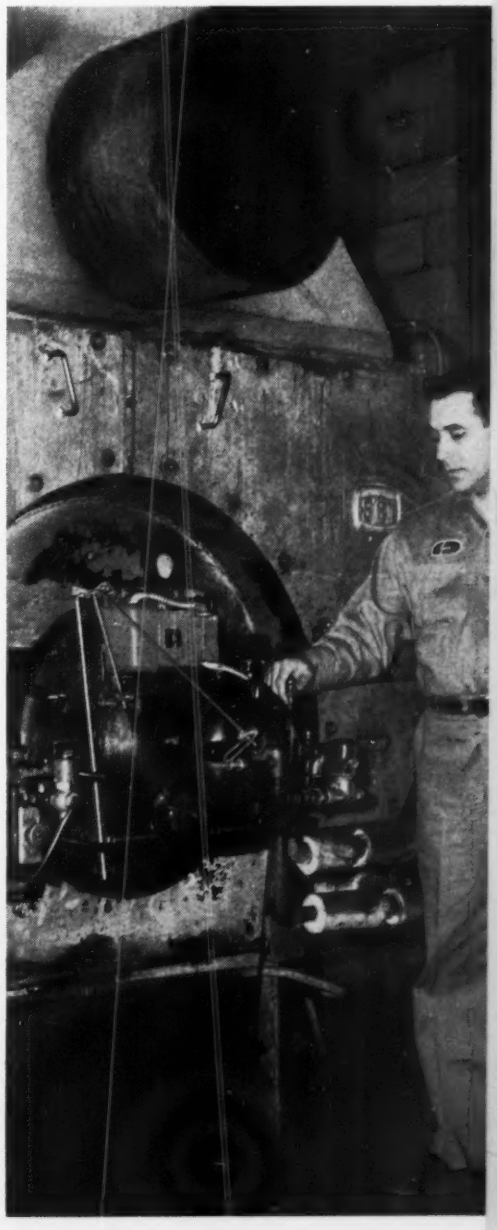
10. Fresh outside air can be introduced at each unit, and as each room requires it. (This seems to repeat No. 4, but was meant to supplement No. 9, emphasizing the fact, that if added to existing systems, fresh air could be introduced more conveniently than by installing ducts to conduct chilled air from a central cooling system.)

11. Only ordinary house wiring is needed to the fan-coil units.

12. Units maintain enough residual heat during off cycle to maintain even temperature and comfort conditions.

A few years ago the wet heat man said, "Give me moving air and I will give you a cold. Let the air move only when heat makes it lighter and cold air will take its place. That is natural circulation." Next year will find the wet heat man making good on new claims. The warm air man will continue to prosper and the airconditioning man will join them both in making life better.

That is one version of one of the ways that living standards are going on up. The cost? Of course it costs more to live better, but each generation is finding it possible to live better, regardless of the cost. That is why kerosene lamps and coal stoves are finding a poor market. That is part of progress.



Joe De Jaeger, manager of apartment at 247 E. Chestnut St., Chicago, inspects Ace horizontal rotary oilburner and Fitzgibbons boiler installed on 26th floor of the building. Companion water chilling equipment of this system is located on the first floor. Oilburner, boiler, chiller and fan-coil unit of different manufacture illustrate the flexibility of combining suitable units to accomplish the desired results.

PART 2 OF A SERIES: GENERAL CONTROLS

Year-round comfort Controls

New Tempotherm clock Thermostat tops the List of a complete Line of Thermostats

by J. W. Schulz

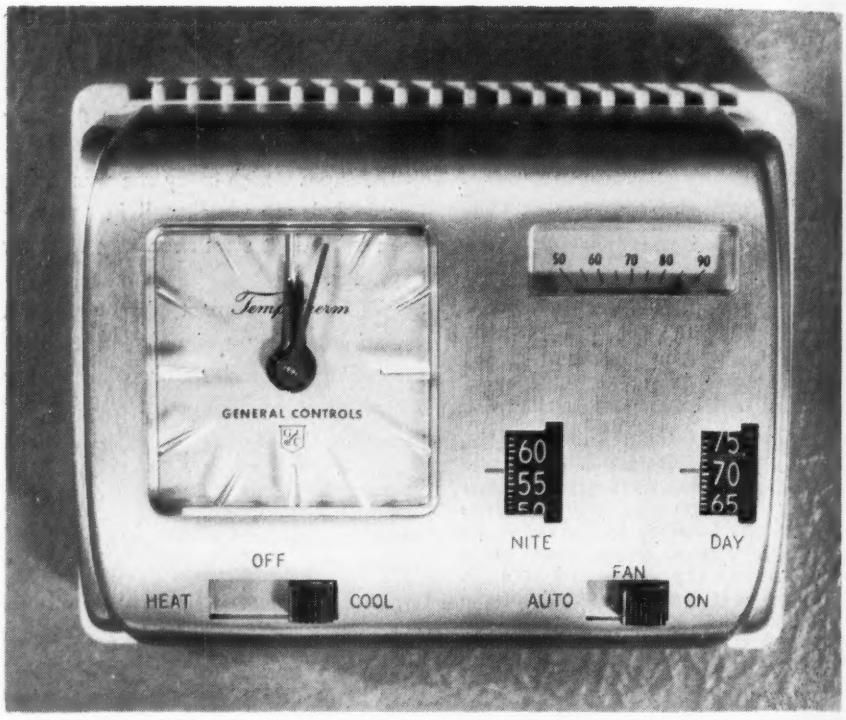
GENERAL CONTROLS studied the trends of recent years and also looked ahead into the future, in developing and designing its new line of room thermostats for year-round air-conditioning systems. That holds true also for the other control-system component parts used, with the thermostats, to form complete control systems for cooling and heating.

Oilheating equipment dealers studying General Controls thermostats receive an education on what's been happening recently in the development of controls for homes and large buildings which are completely airconditioned. Such dealers can't help but be impressed by the heavy bets General Controls has been making on its doing well in the future in the fields of oilheating and year-round airconditioning.

General Controls apparently made the bet, for example, that more clock thermostats will be used, and that its new model clock thermostat will be sold in sufficient volume to justify its development and production. That's a bold bet, considering that though several control manufacturers have offered clock thermostats, only one make has become well-known and widely accepted in the automatic heating industry.

Oilheating equipment dealers studying the General Controls new line of summer-winter thermostats can learn much, even though up to now they have paid little attention to heating-cooling equipment. Such dealers will learn, for example, the modern trend is towards thermostats of beautiful new designs, towards cooling anticipation as well as heating anticipation, towards including a round model in a line of room thermostats, and towards the increased use of mercury-tube switches in room thermostats.

Dealers studying these thermostats also will learn a heating-cooling central system can be controlled by either of two basic methods.



Tempotherm clock thermostat. General Controls emphasizes that the design of this permits automatic lowering of house temperatures in summer when the cooling system is working, as well as in winter. General Controls engineers spell out and stress the advantage of such operation. But for homeowners who want this, and for commercial installations, the Tempotherm can provide room temperatures higher at night than during the day when the cooling system is working, or of course the same temperatures night and day.

First, the system can be told what to do by its owner. It can be set to heat the house or building, by the owner's setting a switch when he wants heat; or by the setting of a switch it can be told to cool the house or building. That way, the owner must set for either heating or cooling. Of course, instead he can turn the system off.

The second basic method of control is fully automatic. For example, the owner sets the cooling dial of his thermostat at 77°F. and sets the heating dial at 72°F. Without any additional attention from the owner, the thermostat starts the cooling system when the house temperature tends to exceed 77°F., and turns on the heating system when the house temperature tends to drop below 72°F.

Each of the two basic methods of cooling-heating control can include variations, refinements, and modifications. As examples, two-step operation of the heating or cooling equipment, or the action of a clock, can be introduced into the control picture. Because of such possibilities, General Controls offers a great number of different models of room thermostats—a number that at first can bewilder an oilheating equipment dealer starting out by trying to give a few minutes to find out the characteristics of each thermostat now made by General Controls.

This company certainly does offer many models of room thermostats. The planned result of this, however, is that from all of these a dealer almost invariably can select a thermostat that produces precisely the type of heating-cooling control which he desires for installations of his usual pattern, or for a highly unusual installation.

The Tempotherm, the clock thermo-

stat recently brought out by General Controls, was selected as the most interesting airconditioning thermostat in this line—by the oilheating and cooling equipment dealers who studied these controls as one of the first steps of preparing this write-up.

The Tempotherm has low-voltage control circuits, as have all the thermostats covered in this article. As it is an electric-clock thermostat, of course it reduces the house temperature automatically each night at or before bedtime, and automatically raises the temperature each morning to increase the temperature before occupants arise. The reduced room temperatures at night improve sleeping comfort, and save fuel. The morning temperature set-up pleases many homeowners by making radiators or warm-air registers send pleasant heat into rooms at getting-up time. In certain homes, it causes a long oilburner "on" period that distributes heat better to all the rooms, than the usual short "on" periods.

The big news about this clock thermostat is, however, that it was designed to automatically reduce room temperatures at night during the summer also when the cooling system is in use.

Men not living in airconditioned homes, learning this news, may explain, "Why keep the cooling system working at night, set to produce room temperatures even below daytime temperatures, when at night usually the outside air is cool and so invites opening bedroom windows?"

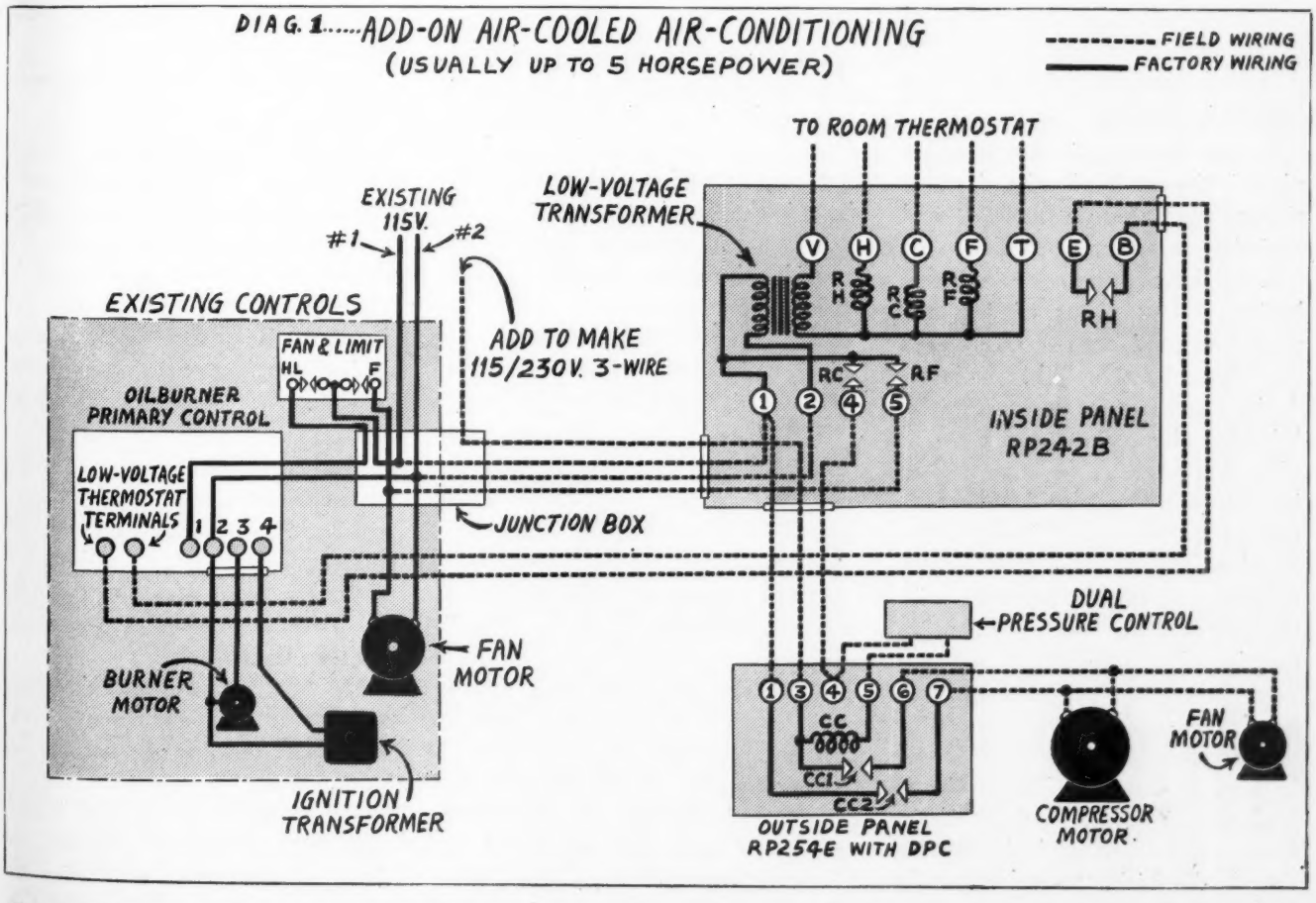
The catch to that lies in the fact that, airconditioned all day, the occupants become accustomed to air not only cool, but also dry. In humid weather encountered much in summer, in cities where much airconditioning equipment is being installed, a man who has enjoyed airconditioning all day will "smell steam in the air" when he steps outdoors and first breathes in cool, damp, evening air.

The way things work out in practice, the homeowner who conditions his home during the day naturally conditions it also during the night.

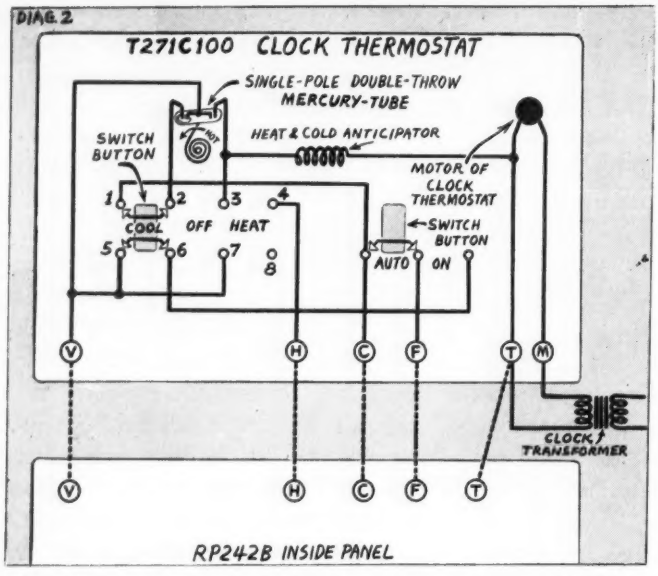
Reducing the house temperature automatically during the night does not work the cooling equipment much more than it would work without the night-time temperature set-back, because the sun heat that's terrific at increasing day-time cooling loads is not a factor nights, and because outdoor temperatures usually are low at night.

These reasons are spelled out by General Controls men for reducing night temperatures in homes during the summer:

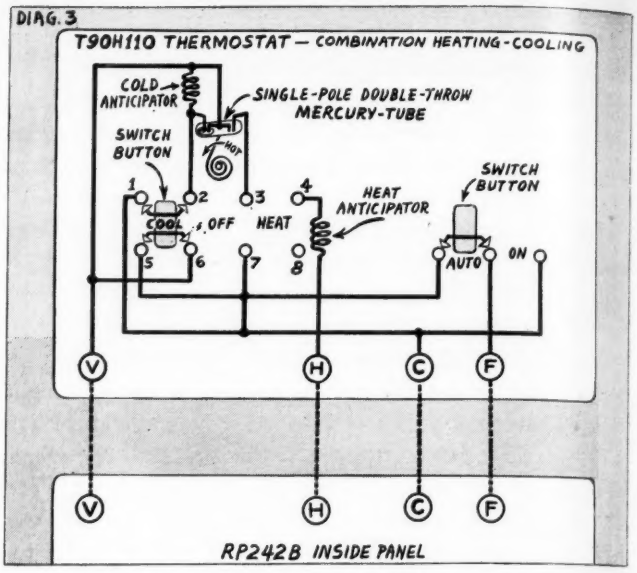
1. In summer as in winter, reduced temperatures at night make for comfortable sleeping. House occupants



Diag. 1—Oilheating equipment dealers and their electricians can easily understand this wiring diagram which shows how to add controls to an existing forced-air job when changing it to a heating-cooling system. See "Existing 115 V." above "Existing Controls." If lines #1 and #2 are heavy enough for the new airconditioning electrical load, they need not be replaced. But a third wire, shown dotted, is added to provide 230-volt current for the motors of the air-cooled compressor unit. The low-voltage transformer in the inside panel provides current for relay coils labeled "RH" (relay for heat), "RC" (relay for cooling), and "RF" (relay for fan). A contact closed by a relay coil is labeled the same as the coil is labeled. Closing of contacts "RH," connected to terminals "E-B" of the inside panel, simply shunt the thermostat terminals of the oilburner primary control, thus start the oilburner.



Diag. 2—Inside wiring of the Tempotherm, General Controls clock thermostat which can be used to decrease or increase room temperatures at night during the summer when the building is being cooled. In the drawing, the left-hand slide-switch is connecting terminals 1 and 2, and terminals 5 and 6. Sliding the switch button to the right connects 2-3 and 6-7.



Diag. 3—This General Control room thermostat T90H110 is extremely simple, for it has but one bi-metal heat-sensitive helix, one single-pole double-throw mercury-tube switch, and one dial for setting the temperature. It is different from the thermostat in Diag. 2, however, in having two anticipators, one for heating and one for cooling.

who sleep with room temperatures reduced for the seven to nine months of the heating season become accustomed to cool sleeping during most of the year. They therefore enjoy cool sleeping also in summer.

2. Low humidity in the rooms at night is the result of reduced nighttime temperatures in summer, and again improves sleeping comfort.

3. Last but most important in homes having cooling plants of just the proper size and not oversize, there's the "thermal flywheel" benefit in reducing room temperatures at night. Working the cooling equipment at night, to cool the entire house and all its contents below usual daytime temperatures, "stores cold" in the house. Starting early on a day that will become extremely hot by noontime, with the tons of house and contents at an especially low temperature, you provide the cooling equipment with a worthwhile head start. By noontime or mid-afternoon, the cooling plant will be doing far better handling maximum load, than it would be doing if the house and its contents had been at a considerably higher temperature early in the morning.

Despite the above line of thinking, a homeowner may not want his room temperatures lowered nights during the summer. In that case, he can have the same temperatures nights and days, simply by setting the "Nite" and "Day" adjustments of the Tempotherm at the same level.

He can go even further. He can set the Tempotherm up as it is set up for commercial installations—to provide little or no cooling at night, and to start up the cooling equipment at any hour in the morning he desires.

In summer, then, the Tempotherm provides three-way operation. It can reduce room temperature at night. It can increase room temperature at night. Or it can maintain the same temperature night and day.

Below its dial-type room-temperature thermometer, and side-by-side, are the two "Nite" and "Day" dials for adjusting temperature. One nicety of these lies in an interlock device that prevents setting the "Nite" dial for a higher temperature than the "Day" dial is set.

Below the "Day" and "Nite" dials is a slide-switch labeled "Fan," which has two positions; one marked "Auto" gives automatic or intermittent fan operation, and the other marked "On" gives continuous fan operation.

At the lower left on the face of the thermostat, below its clock face, is a three-position slide-switch which can be set "Off" to keep the heating-cooling plant idle, can be set "Heat" to start heating, or can be set "Cool" to start cooling.

All this refers to Tempotherm clock thermostat Model T-271C100, which appears in an accompanying photograph.

Internally, this model Tempotherm includes only one bi-metal spiral to sense room temperatures, and only one mercury-tube switch—this is single-pole double-throw to serve for either heating or cooling depending on which way the owner sets the slide switch below the clock face. Inside the thermostat is but one heating element for both purposes of heat anticipation in winter and cooling anticipation in summer.

Cooling anticipation works in the usual manner; a small amount of current flows through the little heater or resistance when the cooling is turned off by the thermostat, and this flow of current stops when the thermostat turns on the cooling.

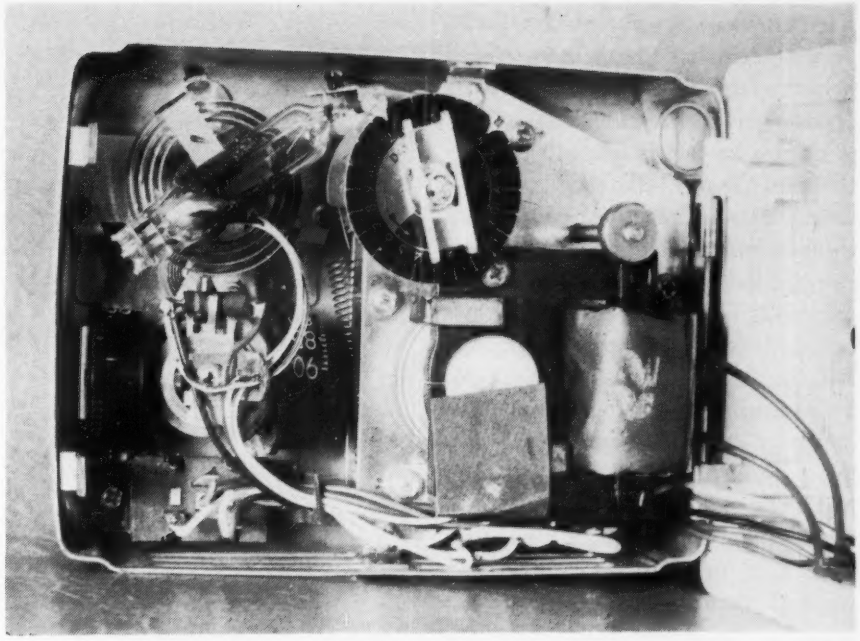
The 24-volt transformer that gives current to the thermostat's clock motor also provides the current the heat-and-cold anticipation heater needs. A neat trick although it isn't new, this eliminates problems of changing or adjusting the heating element to match it to the amperage of the thermostat circuit, or any other circuit.

As has been indicated, before starting the writing of this article the author had oilheating equipment dealers

study General Controls airconditioning thermostats; and these dealers decided the Tempotherm clock thermostat, just described, was the most interesting thermostat in the line. In general, the dealers said, this is the most desirable thermostat in the line—is the one they'd use in their own homes, if they were selecting from the thermostats General Controls offers.

Almost equally interesting and desirable, the dealers decided, is General Controls Series T-240 thermostats. The one studied by the dealers was the Model T-241G100.

Proudly describing this thermostat as "the only one of its kind," General Controls men point out that the four-position slide-switch on the lower left-hand side of the face of the thermostat gives its owner his choice of three kinds of central-system operation (the fourth position of the switch is "Off").



Swing open a Tempotherm clock thermostat without the use of tools and using its hinge, and here's what you see. The synchronous electric clock action is small and features a sweep-second hand.

Four position Switch

Placed in its "Cool" position, this slide - swicth permits only cooling equipment to run — started and stopped by the right-hand thermostat, which has a dial marked "Cool."

Placed in its "Heat" position, this slide-switch permits only heating equipment to run — started and stopped by the left-hand thermostat, which has a dial marked "Heat."

But nudge the slide-switch to its position marked "Auto" for automatic, and you gain the most interesting control performance, for then the cooling system starts when the room temperature rises above the setting of the "Cool" thermostat—and the heating system starts if the room temperature drops below the setting of the "Heat" thermostat.

Lowering the temperature of the room by running the cooling equipment should not, of course. lower the temperature of the heating thermostat enough to turn on heating following cooling. Raising the room temperature by running the heating equipment similarly should not warm up the cooling thermostat enough to start the cooling equipment.

Temperatures can over-ride—after a thermostat turns off the cooling, a room may become still cooler by a degree or two; and after a thermostat turns off the heat, a room may continue to become still warmer by several degrees.

Taking the above factors into consideration, the designers of the General Controls T-240 Series thermostats provided a mechanical interlock between the "Heat" thermostat and the "Cool" thermostat so that the level of cooling must be set a minimum of four degrees above the level of heating.

The interlock actually works like this. Set the "Heat" dial at 75° with the "Cool" dial set at 85°. Then gradually lower the setting of the "Cool" dial. When the setting of this dial becomes as low as 79° (four degrees higher than the "Heat" dial setting) you'll find that it, the "Cool" dial, no longer moves easily. Now press hard on the "Cool" dial to move it to a still lower setting of 75°, and you'll find that lowering its setting moved the "Heat" dial down to 71°.

Similarly a persistent effort to set up the "Heat" dial will move up the setting of the "Cool" dial.

You simply cannot set the "Heat" and "Cool" dials within four degrees of each other. The "Cool" dial must be set at least four degrees higher than the "Heat" dial. That avoids starting and stopping of both the heating equipment on any given morning, afternoon, or evening.

These T-240 Series thermostats are unusually interesting because they can be adjusted once, then will turn on and off the heating equipment and the cooling equipment throughout the year.

For example, set for 72° heating and 76° cooling. That will automatically provide about 72° at any time that heat is needed, and will provide about 76° room temperature at any time that cooling is needed.

The performance just described results from setting the four-position slide-switch at "Auto" for fully automatic operation of the heating-cooling system.

If the owner prefers, he can of course set this slide switch at "Cool" in summer—that turns off the heating system, and permits only the cooling equipment to run in summer, started and stopped by the thermostat marked "Cool." The owner can set this switch at "Heat" in winter to keep the heating system working but keep the cooling equipment turned off. To turn off the entire system, he simply sets the same switch at "Off."

Another slide-switch is marked "Fan" and has a position marked "Auto" for automatic or intermittent operation of an air-circulating fan or blower; it has another position marked "On" for continuous operation of the fan.

All-in-all, after you provide a T-240 Series thermostat for the owner of a home or large building, he can arrive at the kind of heating-cooling programming he prefers simply by setting the thermostat's little slide switches. One great advantage to this is that an equipment dealer does not have to go through lengthy discussions of different kinds of heating-cooling control cycling before he selects the thermostat for an installation. After a 240 Series thermostat is installed, the owner can set it different ways, and decide which pattern of heating-cooling control pleases him most.

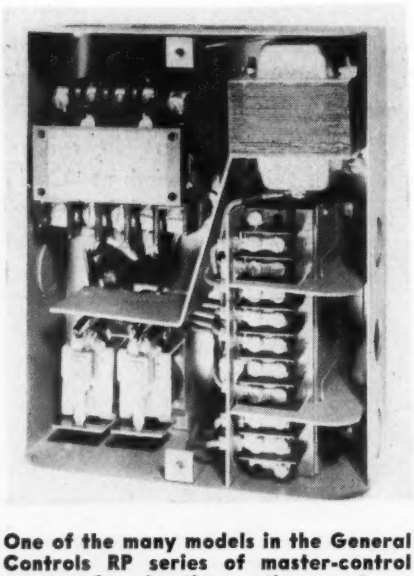
Just to give an idea of the great variety of room thermostats in the General Controls line: This T-240 Series thermostat is available in six different models which give single-stage heating and single-stage cooling control; the six different models have different kinds of switches on their covers.

Also this T-240 Series comes in six models for single-stage heating and two-stage cooling—again the six models have different switches on their covers.

Next come six models for two-stage heating and single-stage cooling; again different cover switches.

Finally there's five models with different cover switches, and all of these provide for two-stage heating and two-stage cooling.

General Controls has several other "Series" of horizontally styled room thermostats with the satin-finish stainless-steel cases. On the elaborate side, for example, is the T-230 Series which contains two thermostats, one for heating and one for cooling—each of these thermostats is complete in itself with its own temperature-setting dial, bi-metal helix, and mercury-tube switch.



One of the many models in the General Controls RP series of master-control panels for heating-cooling systems. Standard models are available with motor-starting relays of different types and different horsepower capacity ratings, for single-phase and polyphase current, and with and without integral dual pressure controls for refrigeration systems.

An elaborate Series

The big idea in providing two independent thermostats is to avoid the owner's having to change the dial settings when he switches from heating to cooling, or from cooling to heating. He leaves the "Heat" dial set for the level heat he prefers, and leaves the "Cool" dial set for the level of cooling he prefers. Then he simply nudges a three-position slide switch to keep the entire cooling-heating system idle ("Off position for the switch), to start summer airconditioning ("Cool" position) or to start the heating system ("Heat" position).

General Controls may be setting a new high in the way of making things easy and simple for owners of airconditioning systems, in bringing out this elaborate T-230 Series designed especially so that an owner has to move a finger just once, not twice, to switch from cooling to heating or from heating to cooling!

The distinctively small and simple type in this line of horizontal, satin-finish stainless-steel case thermostats is the T-90 airconditioning room thermostat. This comes in four types. Model T-90H110, studied before this article was written, for example, has one thermostat dial and one bi-metal helix, but two single-pole single-throw mercury-tube switches attached to the helix (one for heating and one for cooling). On its cover is a master control switch marked "Off," "Cool," and "Heat," and a "Fan" switch marked "Auto" and "On." In bringing out this functionally designed, exceptionally small and simple airconditioning room thermostat, General Controls may be recognizing that from now on many homes in building projects will feature year-round airconditioning.

All the General Controls airconditioning thermostats mentioned so far feature a relatively thin, modern horizontal shape. All have what is described as a lifetime finish, stainless-steel cover which is part of the temperature-sensing system. The covers of these thermostats are hinged to their base plates. To inspect the insides of a thermostat, a serviceman simply opens it the way he would open a book. He needs no tool to do this. Inside the cover which he opens, he finds all the working parts of the thermostat.

To complete its line of airconditioning room thermostats, General Controls brought out its T-190H Series of round, plastic-cover thermostats with a choice of four sub-bases having different manual switch arrangements. Sub-base 112400A, for example, has a system switch with positions "Heat-Off-Cool" and a fan switch with positions "On-Auto." Instructions that come with this include details on how to remove the cover, paint it any desired color, and replace it.

Parts for complete System

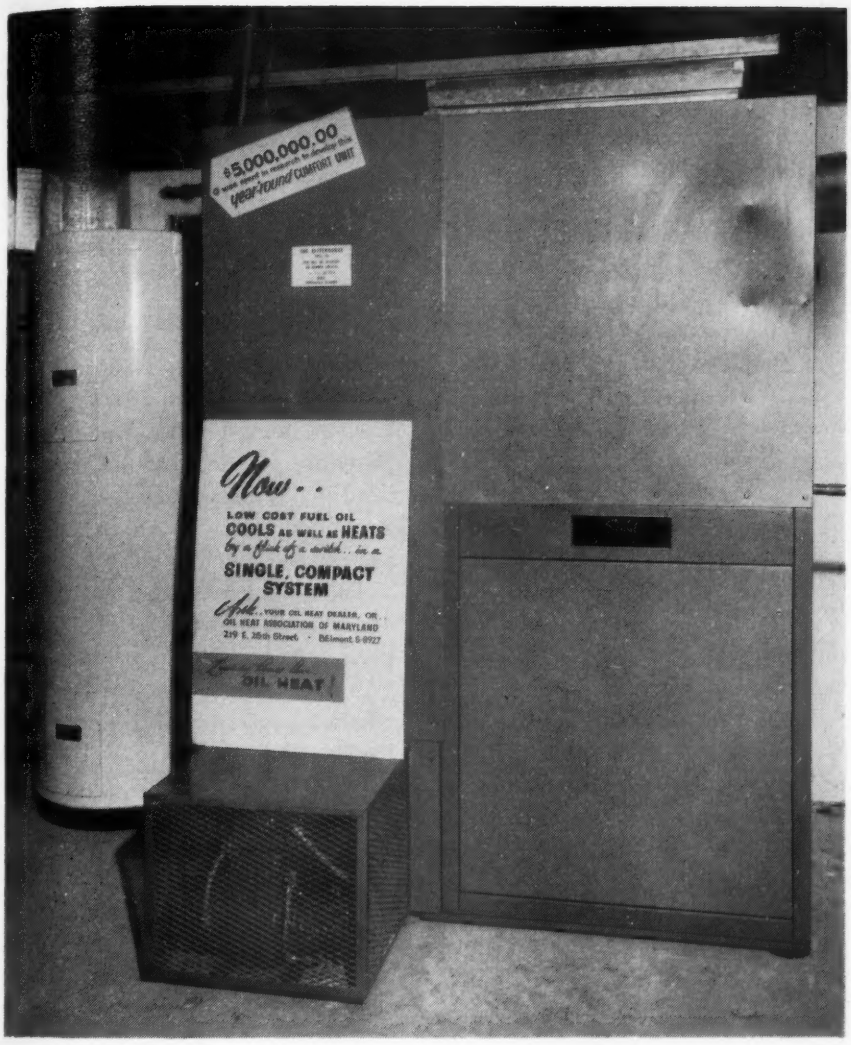
Important as a thermostat is, it is only one part of the control needed for a central system that provides heating and cooling. The thermostat may be considered the brain that tells many other control-system parts what to do. The other parts of a complete control system may include low-voltage and high-voltage relays, motor starters and overload protectors, low-side and high-side refrigeration controls, damper motors, motorized valves, etc.

To provide a complete control system, General Controls offers such component parts as were just listed.

It offers, for example, a line of airconditioning heat-cooling master control panels termed the RP Series.

The large drawing shows what General Controls recommends in the way of complete controls for a forced-air system to which cooling equipment is being added. For the air-cooled compressor unit, located outside the house, an RP254E (with DPC) outside panel is installed, as the drawing shows. This contains a relay with solenoid coil "CC" to close two sets of contacts,

(*Please turn to page* 144)



Oilfired heating and cooling Unit attracts Crowds to Baltimore Home

BALTIMORE'S NBC television station, WBAL-TV, sponsored a brand new exhibition home selling in the $30,000 bracket, known as the "Home Beautiful." The house was open to the public from mid-August to mid-October, seven days a week. It was well-publicized on television, radio, and in the press, and over 100,000 persons have seen the house during the period of exhibition.

Baltimore fueloil dealers were quick to appreciate the tremendous value of becoming identified with this new luxury-living home and arranged with the builders for the house to be heated and cooled by the new and exciting Sun Valley, the oil-operated year round unit developed jointly by Esso Standard Oil Co., Gilbert & Barker, Inc., and Servel, Inc.

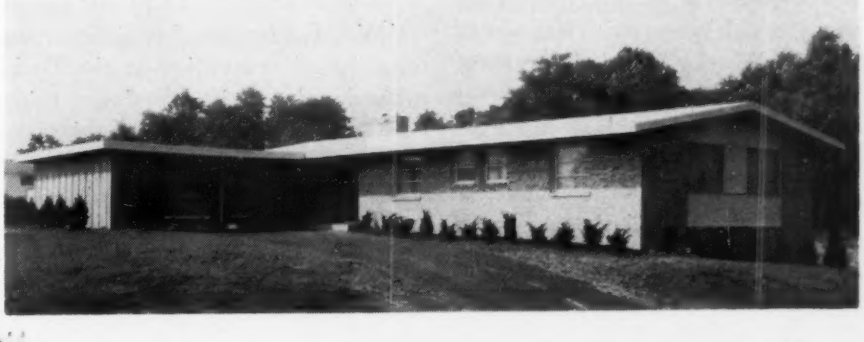
The idea of displaying this unit fitted ideally with the advertising program of the Maryland association whose current slogan is "Luxury Homes have oil Heat." Response has been excellent and never before, in the experience of the Baltimore group, has an oilheating plant attracted so much attention in an exhibition house. It proved to be one of the most popular features of the house and many visitors asked to see the unit as soon as they entered.

So attention-getting was this new piece of Baltimore promotion that a department store executive, after a visit to the "Home Beautiful," straightaway called the Oil Heat Association, requesting that they prepare a window display for his store featuring the unit. The window is to be used during a two-week period when the store is highlighting the theme—the shape of things to come—and many passers by will get another glimpse of the latest thing in oil heat.

It might be pertinent to add that during the time this particular home was on exhibition to the general public, that WBAL radio announced pertinent detail with regard to this property and its contents, including the oil-heating novelty approximately 30 times per day. Also, WBAL-TV had a half hour television program on Sunday, September 29, 1957, during which showing the pictures of the property, its interior, and the oilheating exhibit were clearly set forth by a narrator to an audience of many thousands.

In addition to this, approximately 80 club women representing approximately as many women's organizations in this community, were taken in two buses during Oil Progress Week to the WBAL Home Beautiful, where they were entertained at tea and given a complete tour of the property by Miss Molly Martin of the WBAL staff. This tour was accompanied by a representative of the public relations arm of the Oil Heat Association of Maryland, who furnished pertinent information with regard to the Sun Valley Unit, which performs the dual function of heating and cooling by the use of fueloil.

All in all, WBAL's Home Beautiful has done much to sell the Baltimore public on the advantages and modern aspects of oil heat.



Air-Cooling Show ushers in busy Chicago Week, Nov. 18-21

THE TENTH Air Conditioning & Refrigeration Exposition, taking place November 18-21 at the International Amphitheatre, Chicago, ushers in a busy week. Nine trade associations will be meeting in Chicago during the period of the show:

Air-Conditioning and Refrigeration Institute, sponsors of the show, headquarters at the Sherman.

National Warm Air Heating and Air Conditioning Association, 44th annual meeting, November 19-22, Morrison Hotel.

National Heating & Air conditioning Wholesalers, Inc., 11th annual convention, November 18-20, Morrison Hotel.

Refrigeration and Air Conditioning Contractors Association, annual convention, Drake Hotel.

Refrigeration Service Engineers Society, 20th annual convention, Morrison Hotel.

Air-Conditioning and Refrigeration Wholesalers, 12th annual convention, Morrison Hotel.

American Society of Refrigerating Engineers, 44th semi-annual convention, Shoreland Hotel.

National Association of Practical Refrigerating Engineers, 44th semi-annual convention, Shoreland Hotel.

National Commercial Refrigeration Sales Association, annual convention, LaSalle Hotel.

The exposition opens at 2:00 P.M., Monday, November 18 and closes at 10:00 P.M. that day. On the next three days, however, the show opens at 10:00 in the morning and closes at 6:00 P.M., except on November 21 when the final closing is at 4:00 P.M.

Warm Air Meeting

Here's a rundown of the program scheduled at the Morrison Hotel for the National Warm Air Heating and Air Conditioning Association meeting, a program described as "altogether new." Sessions have been arranged with several speakers at each to discuss topics from the standpoint of the type of business which they represent, such as:

The Terre Haute Story—Walter Sevenson, Hoosier Heating & Sheet Metal, Inc., and Frank Nunlist, Mueller Climatrol, will discuss how the Terre Haute firm increased sales 70% and profits 40% in two years with a continuous advertising program.

Group Advertising Pays Off—a team composed of Walter Marth, Milwaukee heating dealer; Frank E. Mehrings, Peoria wholesaler; and James F. Deane, Tuck-Aire Furnace Co., will describe what happens when the industry works together.

Engineering for Profit—John P. Montonye, Ypsilanti dealer, and Don Winegardner, Majestic Co., Huntington, Ind., will discuss how accurately engineered jobs pay off in sales.

Buying for Profits—William E. Favret and Adam J. Pataky, Ohio dealers, and Newt Hess, Columbus wholesaler, will give tips on buying for profitable operation of a dealership.

Other case histories will be presented on "Profitable Prospecting," "You can sell Quality," "Standardizing for Profit," and "Time-payment Selling."

Dealers tell "how to"

The dealers on the program have been selected because of their own individual experiences in meeting and beating problems involved in the program subjects. Thus, this year's convention has been planned to provide valuable "how to" information for all of the industry people as they listen to the case history experiences.

In addition, the association has announced that The Hon. Frank J. Lausche, United States Senator from Ohio, will be the featured speaker at the November 21 luncheon session of the convention.

The Refrigeration and Air Conditioning Contractors Association opens its annual convention at the Drake Hotel with a session Monday morning, November 18, a luncheon on the same day, a general session and a second business luncheon on Tuesday, November 19.

The Refrigeration Service Engineers Society holds its opening business session at the Morrison Hotel on Saturday, November 16, follows with its first educational session. The second educational session takes place on Sunday, November 17, with the second business session and the annual banquet scheduled for Monday, November 18. The concluding business session convenes on November 19.

Wholesalers Meet

The panel sessions planned by the NHAW include one on "Know all your Costs of doing Business," a second on "Credits — Collections — Finance," a third on "Wholesaler Budgets for sales Promotion" and another on "How to sell the big volume Dealer."

The National Heating and Airconditioning Wholesalers plan these sessions, following a Sunday, November 17 meeting of the Board of Directors. All meetings are at the Morrison Hotel:

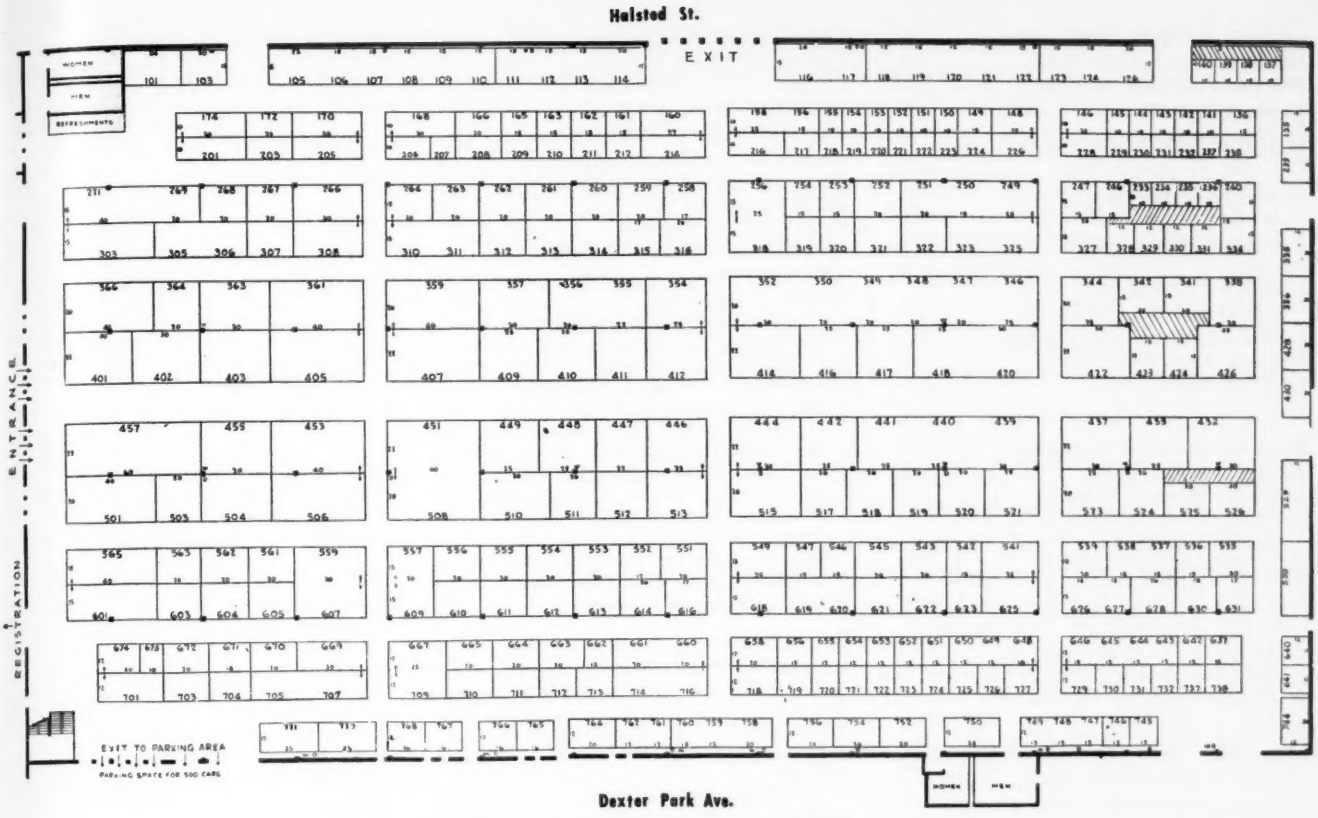
November 18
8:00 A.M.—Committee meetings
12:00 noon—Luncheon meeting
2:15 P.M.—Panel workshop session

November 19
8:00 A.M.—General membership breakfast and meeting
11:30 A.M.—Busisess conference and buffet luncheon
7:30 P.M.—Annual banquet

November 20
8:00 A.M.—Trustees breakfast
9:30 A.M.—Workshop panel
12:30 P.M.—Luncheon meeting
2:15 P.M.—Business session

Radio and TV broadcasts, "continental breakfasts," teas, luncheons, a fashion show and professional entertainment have been arranged for the ladies who will attend the Air-Conditioning and Refrigeration Exposition. Mrs. Charles V. Gary is chairman of the committee for the Women's Entertainment for the Show.

This then is a brief run-down of the many interesting events taking place during the week of the 10th Exposition of the Air-Conditioning and Refrigeration Industry. The show itself is spectacular, as Lud Emde, president, Air Conditioning and Refrigeration Institute, puts it, "If you can imagine $5 million worth of displays, 7,500 different products, over 2,000 experts on hand to answer your questions and 20,000 old friends as visitors, you'll get some idea of what's waiting for you in Chicago."



10th Exposition

Airconditioning and Refrigeration Industry

List of Exhibitors* at Chicago's International Amphitheatre, November 18 to 21

Space No.

A-P Control Div. 310-11
Attending: A. Topp, A. Neva, D. Albright, T. Melville, I. Finkler, H. Welch, G. Calkins.
Exhibiting: A-P valves and filters, Soreng switches.
New Products: Solenoid valves.

Ace Cabinet Corporation 240-334

Acme Industries, Inc. 418-20
Exhibiting: Cooling towers and packaged chillers.
New Products: Acme-Pak.

Addison Products Company 611-12

Aeroquip Corporation 641

Aerovox Corporation 745

Air Conditioning & Refrigeration News 517

Air-Conditioning and Refrigeration Wholesalers 2

Airserco Mfg. Co. 146

Airtemp Division 106-10
Exhibiting: Airconditioners; furnaces.
New Products: 10-30-horsepower packaged air condtioners, line of furnaces.

Alco Valve Company 444

Allen-Bradley Company 767-68

Allin Manufacturing Company 662

American Automatic Ice Machine Co. 503

American Brass Company 521

Space No.

American Coils Co. 663-65
Attending: M. Parcaro, John Kirk, Pete Hatcher, Fred Riedel, Louis Meringolo.
Exhibiting: Airconditioners and condensing units; packaged chillers and air-cooled condensers; heat pumps; cooling towers.
New Products: Air-cooled condensers, water chillers and condensing units; water cooled condensing units.

American Gas Machine Company 747-48-49

American Name Plate & Manufacturing Company 223

American Platinum Works 744

American Potash & Chemical Corp. 316

American Society of Refrigerating Engineers 1

Aminco Refrigeration Products Co. 207

Anderson Chemical Corporation 605

Ansul Chemical Company 449

Appliance Manufacturer 211

Armstrong Cork Company 163

Arrow-Hart & Hegeman Electric Co. 232

Bacharach Industrial Instrument Co. 222
Attending: R. Ulrich, J. A. Stein, Charles Kroshel, John W. Smith, J. V. Palmer.
Exhibiting: Tempscribe temperature recorder; running time recorder; Folrite air velocity meters; filter gauges, gas pressure manometer; sling psychrometer, Monoxor detector; dial thermometer.

Space No.

New Products: Remote reading Tempscribe temperature recorder, sling psychrometer, scoop type Florite air velocity meter, Monoxor carbon monoxide detector and dial thermometer.

Bally Case & Cooler Co. 667-709

Baltimore Aircoil Co. 648-49-50

Barr Manufacturing Co. 542

Bastian-Blessing Company 765-66

Bell & Gossett Co. 525-6
Attending: E. L. Gossett, R. E. Moore, C. E. Pullum, W. A. Boone, H. R. Henke, A. B. Meeg, Harold Lockhart, and other sales personnel.
Exhibiting: Circulating pumps, cooling towers, refrigeration components, package liquid chillers.
New Products: Reciprocating, direct driven freon compressors, motor.

Bendix-Westinghouse Automotive Air Brake Company 414

Binks Manufacturing Company 230-31

Bohn Aluminum & Brass Corp. 359

Brookside Corporation 428

Brunner Manufacturing Co. 349-50-52

Bryant Division of Carrier Corp. 409

Buchbinder Bros. 328

Bundy Tubing Company 545

Burr Oak Tool & Gauge Co. 523

Butcher Boy Refrigerator Door Co. 432

A. M. Byers Company 711

Calgon Company 226

Carbonic Dispenser, Inc. 212

Carrier Corporation 510

Carver Pump Company 145

*As of October 15, including details of exhibits of interest to fueloil-oilheating dealers.

Space No.

Century Electric Company 625
Chase Brass & Copper Co. 562
Chemical Solvent Company 263
Cobra Metal Hose 720
Coldin Cabinet Company, Inc. 135 & 239
Coleman Company, Inc. 320
Commercial Refrigeration & Air Conditioning Magazine 670
Copeland Refrigeration Corp. 118-119-20-21-22
Creamery Package Manufacturing Company 513
Curtis Manufacturing Company 559-607
Custom Dispenser, Inc. 726
Cutler-Hammer, Inc. 430

Davison Chemical Company, 364
Dean Products, Inc. 308
Delco Products Division 448
Attending: M. E. Rasper, R. O. Delendorf, R. R. Pees, J. F. Howe, J. D. Hughes, P. I. Bland, W. A. Calvert, C. L. Holverstott, H. E. Weisenborn, C. B. Lee, J. F. Rutter, E. J. Boyer, R. C. Anderson, J. W. Brumley, O. G. Seattle.
Exhibiting: Air moving, hermetic motors; capacitors, relays and contactors.
New Products: Shaded pole and gear motors.
DeMert & Dougherty, Inc. 673
Detroit Controls Division 557-609
Attending: E. J. Donat, F. G. Coggin, F. Y. Carter, K. B. Thorndike, C. N. Cole, T. C. McKee, D. G. Gott.
Exhibiting: Expansion valves, airconditioning controls.
Dole Refrigeration Company 366
Dow Chemical Company 756
Dunham-Bush, Inc. 346-47-48
Duro-Dyne Corp. 330
F. W. Dwyer Manufacturing Co. 331

Ebco Manufacturing Company 771
E. I. du Pont de Nemours & Company, Inc. 402
Attending: R. J. Thompson, W. A. Bours, T. D. Johnson, Jr., D. C. McSorley, J. C. Hoopes, R. L. Williams, S. N. Seely, D. E. Kvalnes, A. E. Fulford, J. G. Gordon, D. W. Nesbit, Jr., S. L. Richardsin, N. W. Kent, Charles Wirth, G. G. Pearce, H. L. Beavers, W. H. Brown, Jr., J. K. Worthington, J. B. Gray.
Exhibiting: Refrigerants.
Electric Auto-Lite Company 674
Electro Dynamics Division 233-34
Elkhart Products Corporation 731
Emerson-Quiet Kool 442
Emerson Electric Mfg. Co. 660-61
Attending: C. A. Swanland, F. C. Weaver, L. L. Schneider, J. A. Basten, O. D. Metz, E. R. Krueger, L. Jenning, A. C. Dickson, W. H. Thias, C. H. Dederick, E. K. Handlan, L. J. Klautzer.
Exhibiting: Motors and air conditioners.
New Products: Thin model shaded-pole and permanent split-capacitor motors for air conditioners, ⅛ H.P. motors for oilburners, low-ampere air conditioners.
Erickson Industries, Inc. 217
Essex Wire Corporation 221
Evans Manufacturing Company 718
Evis Mfg. Company 252
Encyclopaedia Britannica 723

F5 Air Conditioning Corp. 315

Space No.

Fafnir Bearing Company 261
Fasco Industries, Inc. 554
Federal Refrigerator Mfg. Co. 148-49
Flexible Tubing Corporation 511
Fogel Refrigeration Company 530
Foster Refrigerator Corporation 210
Frankell Manufacturing Co., Inc. 165
Frick Company 314
Frigidaire Division 758-59-60
Frigid Igloo Manufacturing Corporation 168
Fueloil & Oil Heat 725
Attending: R. Gray, B. Dunphy, A. G. Winkler, L. Steedle, D. Raymond, P. E. Pelletier, G. Farrell.
Exhibiting: FUELOIL & OIL HEAT magazine; Oilburners by Steiner; The Selling Man; Better Oilheating; Vaporizing Oil Burners; Reprint booklets: Installing the domestic Oilburner; Oilheating Snags; Heading off Trouble; Profits in Cooling; Wall Flame rotary Oilburners; Fundamentals of oilburner Controls; Commercial-Industrial Oilburning.
Furnas Electric Company 654

Garman Company, Inc. 724
General Air Conditioning Corp. 266
Attending: J. L. Paulus, J. E. Kercheval.
Exhibiting: Airconditioners, heat pumps, humiditrons.
New Products: Humiditron.
General Chemical Division 437
General Controls Company 626-27
General Electric Co. (Airconditioning) 515
Attending: R. H. Jones, H. N. McMenimen, C. B. Ramsdell, W. F. R. Karsten, R. K. Miller, L. H. Hirschbach.
Exhibiting: Airconditioners.
New Products: Packaged water cooled 20, 25, and 30 ton airconditioners.
General Electric Co. 111-14
Attending: E. B. O'Hora, D. G. Holstein, D. L. Klas, W. N. McCroskey, E. H. Perkins, D. R. Chambers, D. C. Hanson, D. G. Cochran, R. E. Wiles, C. W. Seybolt, N. T. Horton, J. G. Smaxwell, A. I. Martin, T. H. Krigbaum, A. F. Munster, G. T. Wright, W. L. Abel, W. G. Rinker.
Exhibiting: Motors.
New Products: Two-pole hermetic, FHP, and slim motors.
E. D. Goodfellow Co., Inc. 616

Halstead & Mitchell 335
Attending: H. I. Schmidt, Bryon Halstead, W. Rapp, H. R. Smith, R. M. Nelson, W. Moffitt.
Exhibiting: Cooling towers, air-cooled and water-cooled condensers, finned coils.
Harry Alter Company 713
Heating & Air Conditioning Contractor 152
Henry Valve Company 669
H & H Tube Manufacturing Co. 258
Highside Chemical Company 623
Holsclaw Bros., Inc. 220
Attending: C. H. Holsclaw, G. Maes, R. Elfreich.
Exhibiting: Tube benders.
New Products: New Method of packaging.
Howard Refrigerator Company 153
Howe Ice Machine Company 710
C. V. Hill & Company, Inc. 547
Huck Manufacturing Company 412
Hussmann Refrigerators, Inc. 155

Ideal Cooler Corporation 170

Space No.

Imperial Brass Mfg. Co. 205
Attending: F. C. Shafer, W. C. Musham, C. H. Benson, G. J. Duerr, G. E. Franck, E. F. Todd, M. L. Warder, C. O. Engels, T. A. Fuite, H. T. McNellis.
Exhibiting: Tube fittings, cutters, benders and reamers; driers and filters; liquid indicators, pipe fittings; charging and testing units; charging lines and test plugs; flywheel puller; valves and tools.
New Products: Imperial diamond 3-way and angle type valves, charging and metering instrument for refrigeration systems, residential airconditioning tool kits, tools.
Industrial Wire Cloth Products Corp. 622

Jackes-Evans Mfg. Co. 259
Jamison Cold Storage Door Co. 101
Jarrow Products, Inc. 238
Jodon Commercial Refrigerator Co. 529

Keco Industries, Inc. 354
Keeney Publishing Company 704
Kelvinator Division 453
Kenmore Machine Products, Inc. 307
Kerotest Manufacturing Co. 519
Kirsch Company 327
Koch Engineering Co., Inc. 328
Koch Refrigerators, Inc. 144
Kold-Hold Division 407
Kramer Trenton Co. 439-41
Attending: Nathan Kramer, Israel Kramer, O. Nussbaum, Harold Kramer, S. C. Segal, George Frie.
Exhibiting: Heat Transfer surface and general line.
New Products: Four basic developments in refrigeration and airconditioning.

Larkin Coils, Inc. 405
Lau Blower Co. 543
Attending: H. Faulkender, T. Byrd, W. Morrisey, R. Weaver.
Exhibiting: Blowers, wheels, pulleys.
Lehigh Manufacturing Co. 156-58
Lewin-Mathes Company 770
Linde Company 319
Liquid-Freeze Corporation 761-62
Lonergan Coolerator Div. 403
Attending: H. T. Buehring, J. R. Lonergan, L. Goldman, J. Patzsch, A. Etes.
Exhibiting: Air conditioners and dehumidifiers.

McCord Corporation 206
McCray Refrigerator Co., Inc. 305-6
McIntire Company 160
McQuay, Inc. 501
Madden Brass Products Co. 655
Attending: M. B. Madden, J. Brinda, R. H. Lacart, A. Schramer.
Exhibiting: Tube and pipe fittings, driers, strainers, charging lines and kits, tubes, valves, tools.
New Products: Multi-can charging kits, color coded charging lines, sweging tools.
Marco Industries, Inc. 253
Attending: G. R. Eddy, R. B. Gage, N. Polydoris, W. E. MacBeth, M. Mathews.
Exhibiting: motors.
New Products: Small diameter motors for fan-coil units and combination heating and cooling units.
Marlo Coil Company 705-7
The Marley Company 267

Space No.

Jas. P. Marsh Corporation 201
Master-Bilt Refrigeration Mfg. Co. 729
Maurey Manufacturing Corporation 140
George J. Mayer Co., Inc. 656
Mechanical Industries Production Co. 618
Meier Electric & Machine Co. 546
Metals & Controls Corp. 701
Metrex Valve Co. 142-43
Midwest Mfg. Co. 219
Milwaukee Electric Tool Corp. 746
Minneapolis-Honeywell Regulator Co. 561
Attending: K. L. Wilson, K. W. Schick, R. M. Locke.
Exhibiting: Thermostats, panels, pressure controls.
New Products: Versions of all the above.
Mitchell Mfg. Co. 422
Attending: R. H. Lodge, E. Mankowski, W. F. Zole, H. Hartman, C. Schroder.
Exhibiting: Airconditioners.
New Products: 2, 3, and 5 hp remote air-cooled systems, with a new design condensing unit.
Morrison Products, Inc. 262
J. W. Mortell Co. 732
Mueller Brass Co. 446
Mueller Climatrol Division 506
Mundet Cork Corp. 721

National Commercial Refrigerator Sales Association 5
National-U. S. Radiator Corp. 269-71
Attending: R. M. Anderson, P. L. Conway, A. L. Hospers, S. Moroh, J. T. Obrig, W. G. Smith.
Exhibiting: Evaporating condenser and water cooled units, Flexazone, water chiller, fan coil units.
New Products: Multi-circuit and Flexazone combination central station units, new design of commercial and residential units.
Nickerson & Collins Company 552

Olin Mathieson Chemical Corp. 537-38
D. W. Onan & Sons, Inc. 712
Owens-Corning Fiberglas Corp. 610
Attending: J. E. Higgins, D. O. Eckley, R. G. Horchler, H. G. Ervin, E. F. Burow, M. L. Wrightsel, F. J. Hardesty, W. R. Wingfield, J. P. Conway.
Exhibiting: Air filters, filter media and adapter unit, duct, insulations.
New Products: Golden dust-stop and U-Trim-It Fiberglas air filters, filter media and adapter unit, pre-fabricated duct.

Pacific Lumber Co. 218
Paragon Electric Co. 313
Attending: J. B. Morrison, F. Hanson, R. W. Eldred, B. Beduhn, W. B. Colvin.
Exhibiting: Airconditioning timers.
New Products: Timers No. TP-300 and ACT-1
Parham Industries, Inc. 730
Peerless of America, Inc. 322
Peerless Equipment Corp. 150-51
Penn Controls, Inc. 541
Attending: R. H. Luscombe, Paul Penn, K. W. Cash, F. X. Fessler, Carlos Morgan, Emile Tassin, J. Johnsonbaugh, H. Gray, J. Moravec, W. Bowen, K. Fisher, R. Ratliff, I. Stepnick, D. Peters, J. Forbes and others.
Exhibiting: Controls for airconditioning, cooling, and heating.

Space No.

New Products: Airconditioning limit controls, three-way, water regulation valves for cooling towers, thermostat for airconditioning, cooling and heating, all-range water regulation valves.
Pennsalt Chemicals Corporation 565
Perfection Industries 455
Attending: C. W. Millsom, H. C. Erhard, M. A. Miller, A. B. MacLaren, W. H. Smith.
Exhibiting: Airconditioners, condensing unit.
New Products: Winter airconditioners with and without cooling coil; self-contained, air-cooled air conditioners.
Price & Rutzebeck 737

Ranco, Inc. 410
Reading Tube Corp. 103
Redmond Co. 264
Refrigeration and Air-Conditioning Contractors 401
Refrigeration Appliances, Inc. Association 3
Refrigeration Service Engineers Society 4
Refrigerating Specialties Co. 411
Recold Corp. 116-17
Refrigeration Research, Inc. 214
Remco, Inc. 336
Revcor, Inc. 719
Attending: J. H. Reichwein, J. F. Kochevar, R. F. McCall, C. M. Rivette.
Exhibiting: Blower wheels and wheel housings.
New Products: New design inlet blower wheels.
Reynolds Metals Co. 451 & 508
Rheem Mfg. Co. 174
Rochester Products Division 321
Rotary Seal Division 254
Rubatex Division 137

C. Schmidt Co. 224
Sealed Unit Parts Co., Inc. 162
Schnacke Inc. 673
Sherer-Gillett Co. 237
Silver Refrigeration Mfg. Co. 138
Small Business Administration 6
Southern Plastics Co. 139
Southwest Mfg. Co. 671
Attending: B. T. Church, Leonard Bisby, Joe Fisher.
Exhibiting: Air furnace, airconditioners.
New Products: Hermetic residential self-contained airconditioning unit 2½-3-4½-5 tons.
Sporlan Valve Co. 323-25
Sprague Electric Co. 166
Attending: Anthony Ruscito, James Mathews, James Drummond, David Simonds, John Brent.
Exhibiting: Capacitors and capacitor assemblies.
Standard Refrigeration Co. 563
Stiles Karlsonite Corp. 329
Stoddard Industries, Inc. 652
Attending: Ford Stoddard, Craig Stoddard, John D. Stoddard, G. H. Cantrell, Hazel Kline.
Exhibiting: Air filters.
Sub-Zero Freezer Co., Inc. 228
Sun Oil Co. 539
Attending: E. S. Ross, W. J. Huth, W. J. Coppock, H. E. Tiffany, W. B. Daub, E. A. Siefken, J. D. Lambert, R. W. Regan, A. G. Nussdorfer.
Exhibiting: Refrigeration oil.
New Products: SUNISCO 3-G refrigeration oil.
Superior Valve & Fittings Co. 556

Space No.

Tecumseh Products Co. 457
Attending: T. W. Rundell, F. G. Purcell, D. J. Bowen, P. G. Colgrove, H. M. Kelso, W. E. Macbeth, A. S. Russell.
Exhibiting: Air conditioners and compressors.
New Products: Pancake type compressors for household refrigerators and freezers, internally spring mounted compressors including high speed models, lowboy automotive air conditioning compressor, new air conditioning line.
Temprite Products Corp. 504
Tenney Engineering, Inc. 619-20
The Texas Co. 203
Emery Thompson Machine & Supply Co. 722
Tork Time Controls, Inc. 651
Torrington Mfg. Co. 361
Attending: A. A. Atalla, L. C. Lindstrom, F. C. Hohmeister, J. W. Fry, M. A. Joulsohn, C. A. Hathaway, D. B. Robinson, C. C. Hussey, S. S. Stull and others.
Exhibiting: Fans, blowers and blower wheels.
New Products: Radiax mixed-flow blowers, plastic and tapered fans, Tab-Lock blower wheels, Vari-Basic blowers.
TOT Towers, Inc. 161
Attending: M. R. Kerr, W. C. Andereck, J. Berry, B. W. Embry, P. Mc Teigue.
Exhibiting: Cooling towers.
New Products: Asbestos casing towers.
True Mfg. Co. 172
Tube Manifold Corp. 727
Tyler Refrigeration Corp. 256 & 318
Typhoon Air Conditioning Co. 303
Attending: D. V. Petrone, A. H. Farr, John Gilbreath, M. T. Firestone, L. D. Spence, N. A. Mendes.
Exhibiting: Airconditioners, air-cooled condensing units, airconditioner-furnaces, heat pump.

United Cork Companies 338
United Friguator Engineers 229
United Refrigerator Co. 208-9
U. S. Air Conditioning Corp. 260
Attending: D. E. Feinberg, R. I. Tanner, R. D. McLain, W. Moiselle.
Exhibiting: Airconditoners, refrigeration equipment, condensing units and accompanying evaporator assemblies.
New Products: Modu-Aire units.
U. S. Rubber Co. 653
United Wire & Supply Corp. 764
Utility Fan Corp. 268
Attending: V. Smith, H. Leo, S. Sakfte, M. McGuire, T. Kindred, J. Pinkus, L. Gorsey.
Exhibiting: Blowers.
New Products: Airconditioning blower.

Vibration Mountings, Inc. 637
Victory Metal Mfg. Corp. 141
Viking Copper Tube Co. 312
Virginia Smelting Co. 549
Henry Vogt Machine Co. 751

Wabash Corp. 154
Wagner Electric Corp. 672
Wall Tube & Metal Products Co. 642
Walton Laboratories, Inc. 752
Attending: J. B. Feldermann, J. R. Lewis, George Lyons.
Exhibiting: Humidifiers.
New Products: Room humidifier with paper media filter.

(*Please turn to page* 142)

What Destiny for Distillates?

How much are Refiners interested in the Future of Oilheating?

by C. E. Kramb*

THE QUESTION I am most frequently asked by heating oil jobbers and those who sell oilburning equipment—regardless of how it is phrased—boils down to this: "Do refiners really consider heating oil distillate an important fraction, or cut, of the crude oil they refine, or do they view this product only as an interim source of revenue and profit until improved refining methods have been devised that will produce a barrel of gasoline from each barrel of crude oil?"

The number of times I have been asked that question, and the sincerity of those who ask it convince me that many of them have somehow reached the conclusion that refiners at the first opportunity will cast off their distillate heating oil production like a sucked orange on a rubbish heap in favor of gasoline and lubricating oil.

And I think I know what has caused their apprehension and given rise to their question. Compared with the fantastic figures spent on gasoline and motor oil for advertising, sales promotion, and research, the amount devoted to similar purposes on heating oil historically has been even less than meager. To anyone interested in heating oil—particularly those whose livelihood is involved—that tremendous disparity naturally has had a disturbing significance.

I have always replied in honesty to my questioners that the refiners certainly do not underestimate the importance of heating oils. Until recently, however, I found it difficult to offer any convincing evidence that their doubts were not without some foundation. I no longer find myself in this predicament.

I sincerely believe it is profoundly significant that some members of the refining industry have now embarked upon a program involving capital investments running into millions for the building of refining equipment designed specifically to up-grade the quality of heating oil. I do not mean to imply that the quality of heating oil at any time in the past has been denied adequate attention by refiners; for this, I can honestly assure you, has not been the case. It is, rather, the change in the up-grading method that to me is so encouraging.

In the past, capital investment by the refining industry has been pretty well confined to refining equipment that would up-grade the quality of gasoline. The quality of heating oil distillate produced by such units has been maintained through processing reflected as an expense item in refinery operations. While no expense has been spared in those processing operations, the investment of capital funds of any substantial magnitude has not been called for in this approach.

Now, however, consistent heating oil excellence is achieved through special refining equipment involving substantial fixed capital investment. Heating oil distillate is now taking a seat on the front porch of the refining industry, so to speak, along with gasoline and lubricating oil.

I feel that distributors will quickly grasp the significance of what I am talking about for they are faced with similar decisions in conducting their own business. Whether to buy additional trucks, or pay overtime to truck drivers and get along with present delivery equipment in serving increased business is a good example. If they feel that business will continue to grow and prosper, they will probably buy additional trucking equipment. On the other hand, if they are in doubt about the future growth and profit possibilities of business, they will probably pay the overtime involved and make your present trucking equipment serve until additional capital investment is justified.

C. E. Kramb

The start already made by the refining industry in investing capital funds to improve heating oil quality is, therefore, to me a very encouraging indication that the management of at least some rather substantial refiners have a strong conviction there is a promising future in the refining of heating oil distillate.

Supporting that indication, substantial refiners have offered oilburner manufacturers the use of their elaborate research facilities and fine technical personnel in a cooperative effort to improve upon oilburning equipment as we now know it. Tangible accomplishments have already been achieved through this joint undertaking.

I am painfully aware that the benefits to be derived from the developments I have discussed and hold in such high regard will take some time in reaching you, your customers and your prospects for automatic oil heat. But to me, these two recent developments reflect more confidence in the destiny of automatic oil heat than full page advertisements in Sunday newspapers proclaiming its outstanding benefits and advantages. I hasten to agree, however, that the latter will do much more to convince a live prospect

*Manager, Fueloil Div., Gulf Oil Corp., Pittsburgh. This is a condensation of the author's presentation to the members of the Pennsylvania Petroleum Assn. at its Fall Convention at Pocono Manor.

for a new heating plant that "Oil Heat Is Best."

I have a firm conviction, however, that through management's awareness of its additional investment in the industry, a much more favorable atmosphere for the consideration of advertising and sales promotion expenditures on behalf of heating oil has been created.

So what does the immediate future hold by way of assistance from refiners in the competitive struggle for the automatic home heating business? Well, a few years ago I would have had to duck this question somehow. Previous to that time some refiners did contribute financial support to local programs promoting oil heat; but this support was uncertain, and often those areas most in need of help didn't get it.

Then, three years ago, Oilheating Market Reports was organized in the hope that this situation could be corrected. Robert Gray, editor of FUEL OIL & OIL HEAT magazine, was persuaded to become its Director. OHMR's function was to survey local marketing areas of substantial heating oil potential and then make recommendations to refiners, primary suppliers and local area distributors as to how much money would be required to conduct an effective sales promotion and advertising program.

Program Cost Split

It was also to recommend how the cost of the program should be split between the distributor who sells to the home consumers and the refiner or primary supplier who brings heating oil into the area at the wholesale level of distribution. I believe that some 35 marketing areas have now been surveyed. Contributions made by most refiners, based on "Oh Mister's" studies have been encouraging.

Those of you who are located in one of these 35 marketing areas should certainly support this activity. Your support should include not only your financial contribution on the basis recommended, but also as much time and effort as you possibly can give to the management and direction of the program itself. Each of you should do your best to see to it that everyone who distributes heating oil in your area participates in similar fashion.

Keep in mind that this activity is administered locally. The handling of funds raised and the selection of the advertising and sales promotion approaches are at the discretion and under the direction of the local organization sponsoring the program. A strong, active and 100% participating local group is, therefore, essential if this first collective effort to which many refiners now subscribe is to continue to meet with success.

Urge Your Support

Imperfect though this procedure may seem to some of you, I plead with you to support it, and through your support smooth out any features of the program which to you seem objectionable. But be careful to criticize constructively, lest you kill the goose that lays the golden eggs; and golden eggs they are to those of us who over the past 25 or 30 years have been trying to devise some sort of a procedure through which financial support for the promotion of oil heat could be secured from refiners on an equitable and impartial basis.

Those of you who are in marketing areas of substantial heating oil potential which have not yet been surveyed by "Oh Mister" should have your local OHI Chapter—or your local industry organization, if you have no OHI Chapter—contact Oilheating Market Reports at 424 Madison Avenue, New York 17, New York. Bob Gray or his associate, Fred Burroughs, will be glad to advise you on requirements you must meet to qualify for a survey.

I have taken up a good bit of your time in trying to convince you that there are encouraging signs refiners are taking an increased and genuine interest in the heating oil they produce—first, by way of making substantial capital investments in behalf of quality improvement, second, by placing their research facilities and personnel at the disposal of oilburner manufacturers for cooperative effort toward equipment improvement and, third, by subscribing to a program through which they are making financial contributions to local marketing area groups for the promotion and advertising of heating oil.

Now, I feel that I would be neglecting my responsibility to this organization and its individual members if I did not comment on a subject of vital importance not only to every petroleum marketer but to every individual citizen. That is the matter of imports.

You gentlemen of Pennsylvania, by heritage, have an intimate knowledge of the problem and its importance, for it was in the state of Pennsylvania that oil was first produced in commercially significant quantities some 100 years ago. Since production reached its peak in Pennsylvania, in the early 1890's, it has gradually declined to the extent that today's production is only 25% of what it was 60 years ago. Although percentages vary, a similar pattern of decline from peak production has developed in several other oil producing states such as Illinois, California, Oklahoma, Arkansas and Ohio.

New Producing Areas

No one contends that all of the producing areas in this country have been located, and there are other proven areas of substantial capacity which, admittedly, have not yet reached their estimated potential. But there is no doubt that it is becoming increasingly difficult and costly to find new producing areas; likewise, to get the oil out, once such areas have been located.

The important question to be resolved is how to best conserve what we now have, including what we may reasonably believe lies undiscovered within the limits of continental United States. To help us supply our ever-increasing needs for finished petroleum products, it is inconceivable that we shouldn't take advantage of this precious raw product presently available from other prolific producing areas outside of continental United States, thereby reducing the drain on our own resources.

Your Association has taken a definite stand on this issue. But I want to recommend that each of you as voting, taxpaying citizens resolve this problem in your own mind as individuals; and whatever your conviction may be, make it known—make it known today, tomorrow, and every day until a real majority through the

(Please turn to page 140)

Consumers talk about Fuels

Study No. 3 in OHMR *Markets*—NIAGARA FALLS, N. Y.

THE THIRD Consumer Attitude Survey in OHMR's current series cover Niagara Falls, N. Y., a relatively small market, for comparison with the two previous surveys which dealt with a medium-sized market (Hartford), and a large metropolitan market (Baltimore). This study was conducted (via telephone) as a study project by students of Niagara University's School of Business Administration. Responses from 496 local home residents were tabulated, with 54% from women; 42% from men; and 4% unidentified in the survey.

The majority of homes in the Niagara Falls area (including adjacent communities of Sanborn, Ransomville, Youngstown, Lewistown and Grand Island) are valued between $8,000 and $20,000 with 83.2% owner occupied and 16.8% rented. The relative valuations made by respondents ran as follows:

Valuation	*Percentages*
$ 4—8,000	11.4%
8—15,000	35.1
15—20,000	34.7
20,000 & over	18.8
	100.0%

The average size of homes surveyed was 6.6 rooms; average size of family per household, 3.9 persons. The average term of residence was 10 years. Bracketed in terms of 5 years, the following residency pattern was developed:

Lived in house	*Percentages*
0— 5 years	39.9%
5—10 years	25.3
10—15 years	11.6
15—20 years	10.5
20, or more years	12.7
	100.0%

As in the two previous surveys, oil was shown to be the most popular fuel in the Niagara Falls area. 70.9% of the homes surveyed were oilheated; 12.4% used gas; 15.9%, coal; .8%, other fuel. Among owners 72.2% used oil; 12.8% used gas; 14.3%, coal. Among renters, 64.6% used oilheat; 11.0%, gas; 24.4%, coal. While there is no striking variation in type of fuel used among owners as compared with renters, a significant finding does occur in usage of the three principal fuels in "new" versus older homes; 43% of all oilheat usage is in homes lived in five years or less; only 37% of total gas heat usage is in this age class. Related to home valuations, oilheat is strongest in the $20,000 and over bracket; gas is strongest in the $15-20,000 clasification.

Warm air accounted for 70.6% of the heating systems in the survey; wet heat, 23.9%; space heaters, 5.5%.

Most switches in fuel usage have been from coal to oil, with the customary reasons of "convenience" and "cleanliness" predominating. Of the 126 persons who stated they had switched fuels while in their present homes, 94 switched from coal to oil; 20 switched from coal to gas. Only 8 switched from oil to gas; 1 from gas to oil.

Those replying to the question of reason for choice of present fuel usually gave more than one reason. TABLE 1 has been arranged in order of importance and combining reasons which are essentially the same:

When asked how they rated their present fuel on "even, comfortable heat," 35.4% of the oil users rated oilheating "Excellent"; 56.2%, "Good"; 7.2%, "Fair"; 1.2%, "Poor." Of those using gas heating, 49.2% rated their present fuel "Excellent"; 45.9%, "Good"; 3.3%, "Fair"; 1.6%, "Poor." 24.4% of coal users rated their fuel "Excellent"; 53.8%, "Good"; 16.7%, "Fair"; 5.1%, "Poor."

Both men and women, when asked what attributes they most desired in a fuel of future choice, named "even heat," "economy," "convenience," and "cleanliness" in that order of preference. As to opinions on various fuels, oilheat led as cheapest, healthiest, safest, cleanest, most convenient, and most comfortable. Gas led as cheapest equipment to buy.

On inquiry as to what fuel the respondent would choose for his next or future home, oilheat led by a wide margin with both men and women. 60.7% said they would select oil; 33.5% favored gas; 4.2% preferred coal. 1.6% specified other fuels, including electricity.

The survey notes that the question with regard to airconditioning is a "pie-in-the-sky" type of question, since many who may have expressed a desire for airconditioning might not actually want it at a definite future date in view of cost or other reasons. However, some 67.4% replied they did want it; 29.6% did not want it; 1.8% don't know; 1.2%, no answer noted on survey.

An impressive awareness of advertising for one fuel or another was noted in this area. Out of 496 respondents nearly half (227 individuals) have noticed advertising for the various fuels. Oilheat promotion appeared to have made the greater impact, with 39.7% men and 23.5% women having noticed oilheat advertising.

With respect to annual heating costs and current price of fueloil, the awareness was not so impressive. The number interviewed who had no clear cut notion of price was about on a par with the findings in the two previous surveys. 25.6% of those using oil reported they did not know what their annual heating costs were. 26.3% of gas users and 19.4% of coal users reported "Don't know" to that question. Of those responding on annual costs, the figures averaged out at $201.69 for oil; $174.69 for gas; $160.90 for coal. It is interesting to note that men respondents were no more aware of these costs than women respondents.

This survey asked for an opinion on cost by respondents who had given a figure for their annual heating costs. These opinions are reflected in TABLE 3:

TABLE 3

Opinions on heating Costs

Ranking	*Oil*	*Gas*	*Coal*
Low	17.2%	6.9%	13.5%
Reasonable	74.9	81.4	64.5
High	7.5	11.7	20.4
No Opinion	.4	—	1.6
	100.0%	100.0%	100.0%

The question on the per gallon price paid for No. 2 fueloil confirmed the findings in the two previous surveys that oilheat users are not keenly aware of posted prices of fueloil, nor moderate fluctuations in that price. 17.6% of those quoting a price they thought they paid were correct to within .4¢ of the posted price, while 82.4% were incorrect or did not know. The men did not make a better average than the women in this respect. Among women, guesses ranged from 13.5¢ to 32¢ per gallon; among men, 8.8¢ to 28¢ per gallon. The prevailing price at the time of the survey was 15.9¢ per gallon.

TABLE 1

Reasons for choice of present fuel

	Fuel Chosen		
	Oil	*Gas*	*Coal*
"Always used" "already installed"	27.9%	19.0%	62.0%
"Convenience"	26.7	27.0	4.0
"Less work"	9.5	1.6	—
"Clean"	7.9	19.0	—
"Only fuel available"	6.8	1.6	12.0
"Economical"	5.6	17.5	10.0
"Even"	5.6	6.3	4.0
"Recommended"	2.8	1.6	—
"Safe"	.8	3.2	—
"Dependable"	.4	1.6	2.0
"Other Reasons"*	6.0	1.6	6.0
	100.0%	100.0%	100.0%

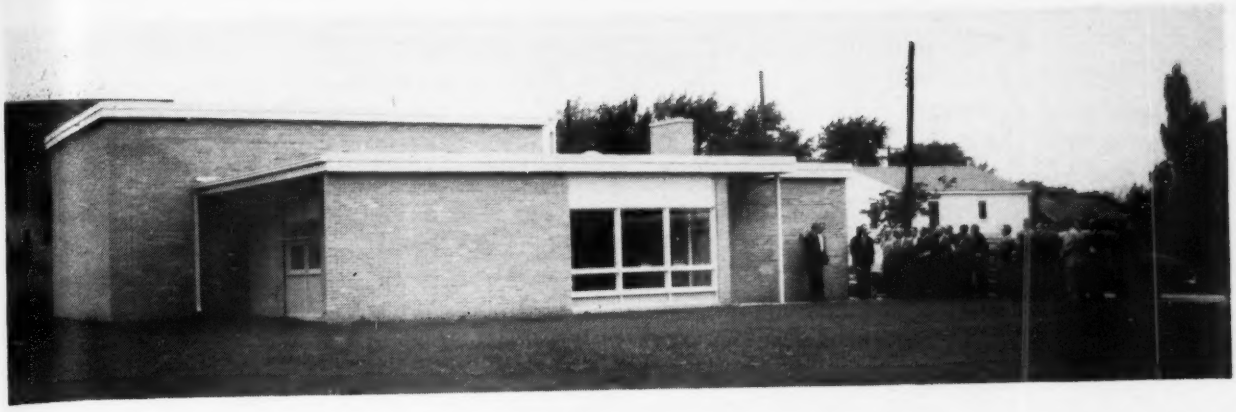
* Other reasons included: "warmth", "landlord", "fixed up house", "better", "advertising", "is fueloil dealer", "no place for coal", "partial to gas", "best fuel", "no reason".

TABLE 2

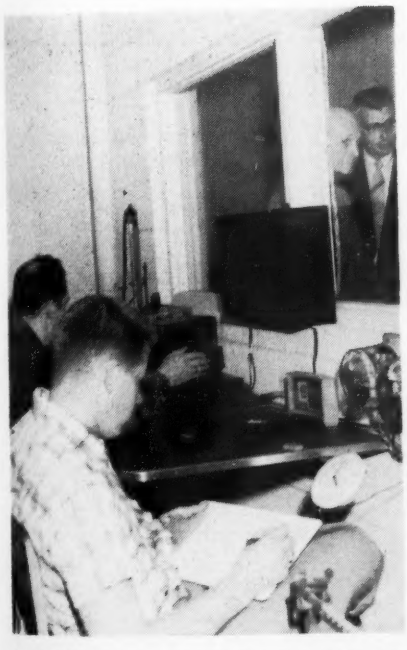
How they rate the different fuels

Attribute	*Oil*	*Gas*	*Coal*	*Other Fuels*
Cheapest	43.2%	33.7%	22.3%	.8%
Healthiest	55.8	24.9	16.1	3.2
Cheapest Equipment	32.9	34.7	30.1	2.3
Safest	62.7	19.7	15.0	2.6
Cleanest	56.5	34.7	5.8	3.0
Most Convenient	68.2	28.0	1.8	2.0
Most Comfortable	58.2	24.6	15.4	1.8

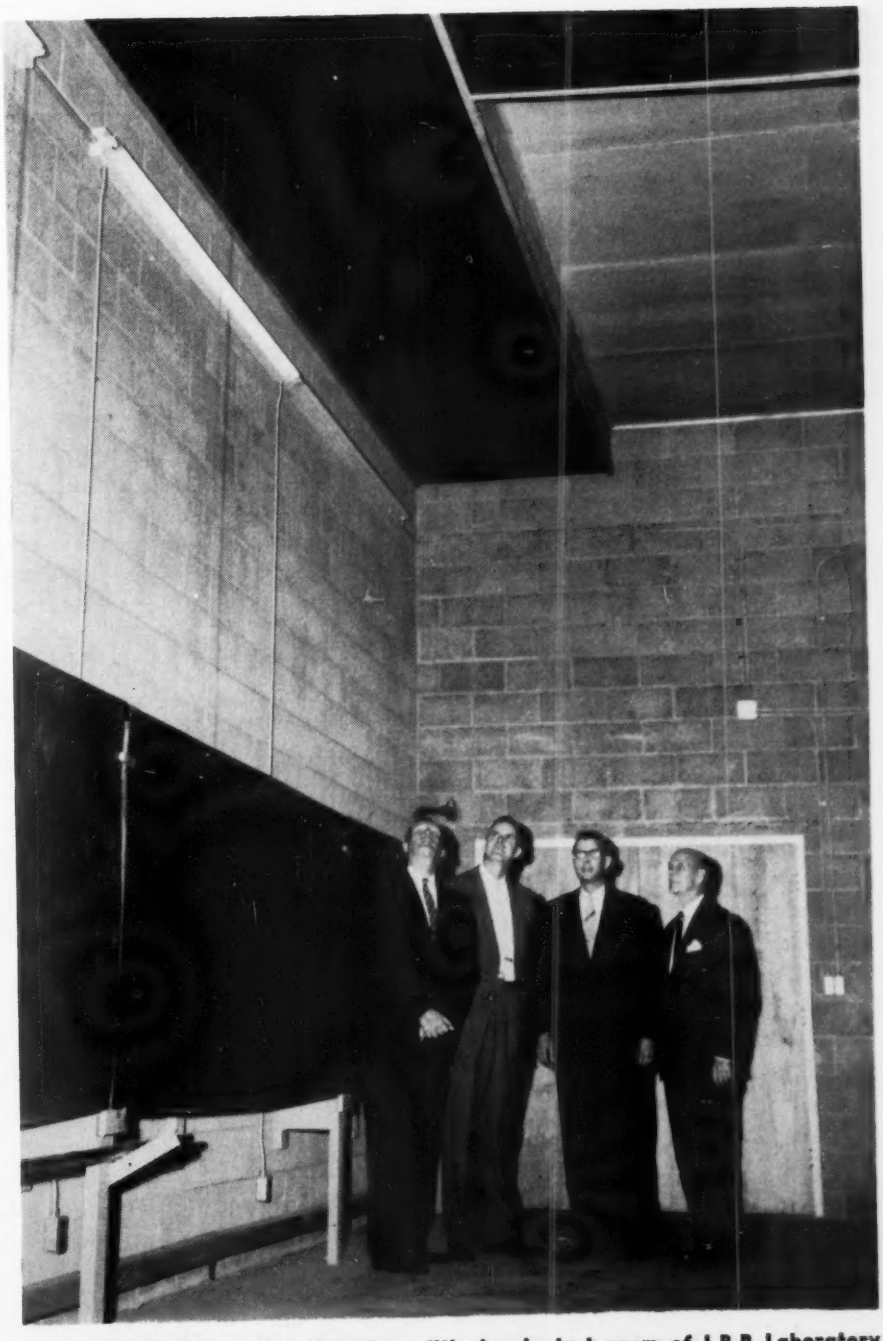
(All opinions total 100.0% horizontally)



I-B-R Laboratory in Urbana doing Research in Hydronics



The I-B-R Laboratory shown at the top of the page was built for the industry at a cost of approximately $75,000. Here, specialists will delve into hydronics, the science of heating and cooling with water. In the picture above, test equipment is used to check performance of baseboard and commercial finned tube radiation. Beyond the glass can be seen some of the guests who attended the recent dedication. The laboratory which is located in Urbana, Ill., will supply supplementary and check test information on radiation which has I-B-R ratings.



Unique distribution system for airconditioning in test room of I-B-R Laboratory consists of peg board in ceiling which has hundreds of tiny holes. This method of distribution keeps air movement at a minimum. Examining the room are left to right: T. B. Focke, I-B-R chairman; Professor Warren Harris, who conducts the I-B-R research program; Glen Sward, laboratory engineer; and Robert E. Ferry, general manager of the Institute of Boiler & Radiator Manufacturers.

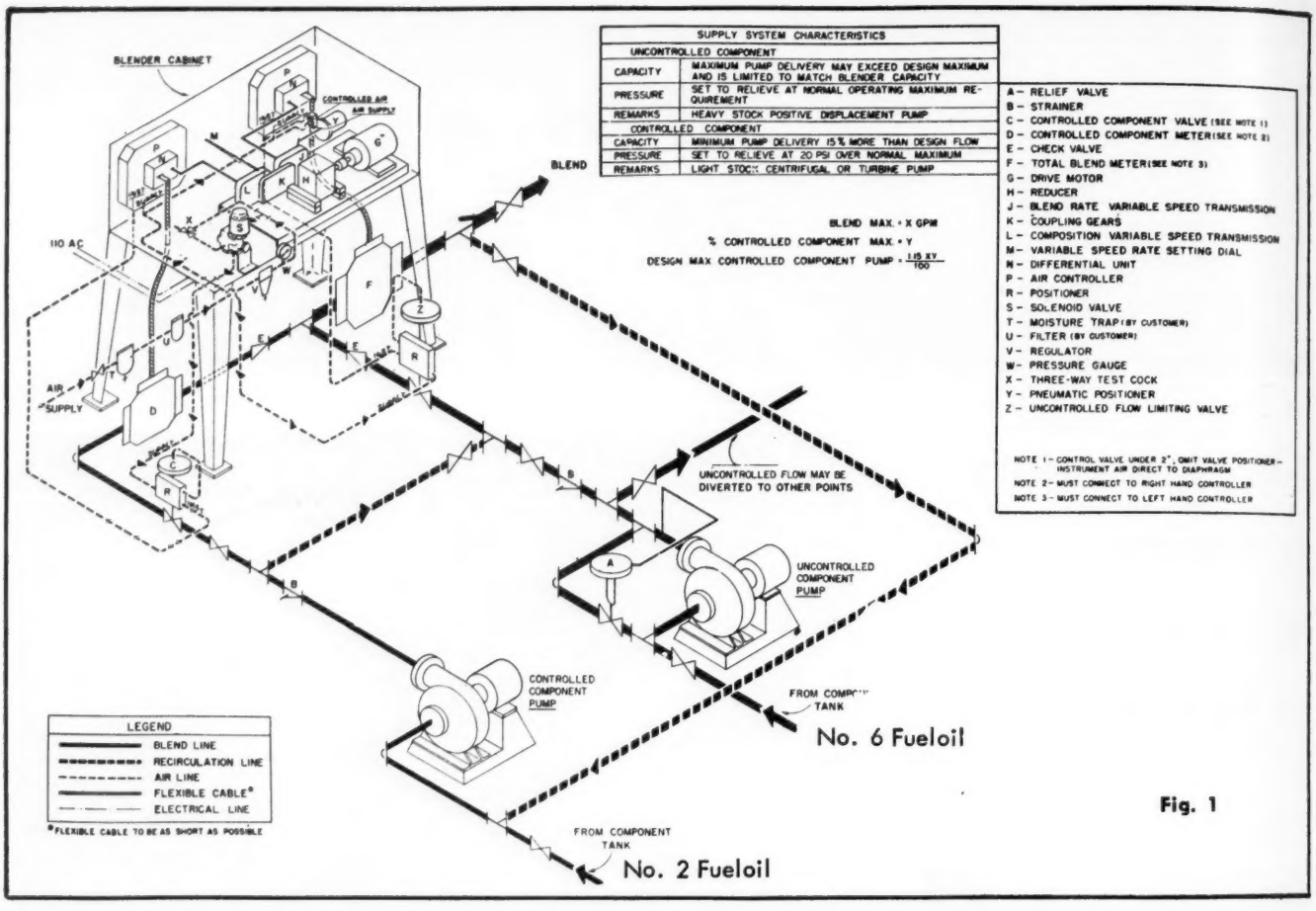

BLENDER CABINET
CONTROLLED AIR SUPPLY
110 AC
AIR SUPPLY
BLEND
SUPPLY SYSTEM CHARACTERISTICS
UNCONTROLLED COMPONENT
CAPACITY
MAXIMUM PUMP DELIVERY MAY EXCEED DESIGN MAXIMUM AND IS LIMITED TO MATCH BLENDER CAPACITY
PRESSURE
SET TO RELIEVE AT NORMAL OPERATING MAXIMUM REQUIREMENT
REMARKS
HEAVY STOCK POSITIVE DISPLACEMENT PUMP
CONTROLLED COMPONENT
CAPACITY
MINIMUM PUMP DELIVERY 15% MORE THAN DESIGN FLOW
PRESSURE
SET TO RELIEVE AT 20 PSI OVER NORMAL MAXIMUM
REMARKS
LIGHT STOCK CENTRIFUGAL OR TURBINE PUMP
BLEND MAX. = X GPM
% CONTROLLED COMPONENT MAX. = Y
DESIGN MAX CONTROLLED COMPONENT PUMP = XY/100
A - RELIEF VALVE
B - STRAINER
C - CONTROLLED COMPONENT VALVE (SEE NOTE 1)
D - CONTROLLED COMPONENT METER (SEE NOTE 2)
E - CHECK VALVE
F - TOTAL BLEND METER (SEE NOTE 3)
G - DRIVE MOTOR
H - REDUCER
J - BLEND RATE VARIABLE SPEED TRANSMISSION
K - COUPLING GEARS
L - COMPOSITION VARIABLE SPEED TRANSMISSION
M - VARIABLE SPEED RATE SETTING DIAL
N - DIFFERENTIAL UNIT
P - AIR CONTROLLER
R - POSITIONER
S - SOLENOID VALVE
T - MOISTURE TRAP (BY CUSTOMER)
U - FILTER (BY CUSTOMER)
V - REGULATOR
W - PRESSURE GAUGE
X - THREE-WAY TEST COCK
Y - PNEUMATIC POSITIONER
Z - UNCONTROLLED FLOW LIMITING VALVE
NOTE 1 - CONTROL VALVE UNDER 2", OMIT VALVE POSITIONER - INSTRUMENT AIR DIRECT TO DIAPHRAGM
NOTE 2 - MUST CONNECT TO RIGHT HAND CONTROLLER
NOTE 3 - MUST CONNECT TO LEFT HAND CONTROLLER
UNCONTROLLED FLOW MAY BE DIVERTED TO OTHER POINTS
UNCONTROLLED COMPONENT PUMP
CONTROLLED COMPONENT PUMP
FROM COMPONENT TANK
No. 6 Fueloil
FROM COMPONENT TANK
No. 2 Fueloil
LEGEND
BLEND LINE
RECIRCULATION LINE
AIR LINE
FLEXIBLE CABLE*
ELECTRICAL LINE
*FLEXIBLE CABLE TO BE AS SHORT AS POSSIBLE

Fig. 1

Fueloil Blending at Home

Some Marketers make the middle Grades by hot Mixing light and heavy Oils

by Lawrence Lowy*

INTERMEDIATE GRADES of fueloil, mainly Nos. 4 and 5, grow more and more popular in many areas throughout this country. While they have been used to some extent in the past, their increasing availability and the corresponding suitability of present commercial burners for handling fuels of this type make this developing growth pattern logical.

Why all this attention? First, of course, a price differential exists between No. 2 and the heavier fuel which can represent a large saving for commercial burner operators. Ability to burn No. 6 means large installations and heavy loads. This is not economical for stores, office buildings, schools, dairies, apartment houses and light industries. Burner manufacturers, well aware that heavier fuels present attractive operating savings, have designed units to handle the fuel ranges now available. Then too, competition from gas challenges burner and oil sales in some areas.

What now constitutes these intermediate fuels? The United States Department of Commerce, Commercial Standard CS-12-48, gives rather broad specification limits. For example, one of the most widely used means of classification is viscosity; for No. 4 oil the standard gives the range as 45 to 125 SSU at 100° F. The same range on No. 5 covers 150 to 400 SSU at 100° F. In addition No. 4 is described as an "oil for burner installations not equipped with preheating facilities," and No. 5 description reads, "residual type oil for burner installations equipped with preheating facilities."

Other specifications cover water and sediment; in the case of No. 4 the limit is given as 0.5% while for No. 5 it is given as 1.0%. Sometimes either of these fuels must be low in sulphur content, yet the specification provides a

In-line blending of No. 2 and No. 6 fueloils to produce No. 4 and No. 5 grades is attracting more and more attention. The flexibility in storage facilities for the dealer perhaps is best illustrated by the ability to stock two grades and sell three, without adding tankage. The article begins with a description of the blending process and concludes with a look at the benefits gained by a fueloil dealer who installed blending equipment. It enabled him to eliminate No. 4 storage, increase his No. 2 storage to accommodate a growing market and still supply all the needed middle grades.

*Regional Engineer, B-I-F Industries, Inc.

"no limit" range for maximum sulphur percentage.

We must admit the foregoing "specs" cover too broad a range as "No. 4" or "No. 5" to meet the requirements of specific burner installations. Usually the power plant operator or engineer will determine the product which will give him most economical operation, i.e. burner efficiency at lowest possible cost. Because of the wide range in which any fuel designation can fit, different plants in various locations will be calling for different fuels under the same number designation. As a result one supplier gets complaints on his product, while another finds ready acceptance—both classified as the same product. Clearly tailor-made blends can satisfy any condition.

More severe Processing

In the past, No. 4 and No. 5 fueloil was furnished as a direct distillation product. This has become uneconomical as production has called for more severe processing and subsequent reduction in middle range products. This, of course, has cut most severely into the distillate fuels. And, as a result, these products must be refinery blended. Because of this, and because of the availability of suitable equipment for blending in-line at the terminal direct to the transports, the independent marketers are, more and more, producing their own No 4 and No. 5 products directly from No. 2 and No. 6 storage.

A wide range of intermediate products is available by blending a No. 2 and a No. 6 fueloil. The blend proportions can be adjusted so that viscosity, gravity, pour point, sulphur content or any other specification can be produced readily within the ranges of the two products being blended. This is the object of a blending operation.

The fact that customer preferences are more and more governing marketing operations indicates that suppliers must have means to meet the widely varying requirements on product or lose those accounts not accepting the "going" No. 4 or No. 5. He may want a special low viscosity, or low sulphur or possibly even a special pour. This can't be done by putting in more tankage—without a tremendous investment—and often there isn't even land available. But the supplier can blend it as his customer wants it from base stock tanks direct to the transport.

The actual blending operation is performed by a device such as that shown in FIGURE 1. No. 2 fuel can be handled at ambient temperature; it is recommended that No. 6 be handled at a temperature somewhere between 120 and 130° F. Products are measured by the meters designated "D" and "F" and feed from this point directly to the loading rack. The meters report measured flow to the control cabinet in which desired proportions have been established.

Agitation completes Blending

The controlled component or No. 2 oil meter is mounted in the No. 2 fuel line while the larger meter, rather than being in the No. 6 fueloil line, is mounted in the combined flow or No. 4 fueloil line. The reason for this is twofold. It provides sufficient agitation to insure that the mixture is completely blended. It provides full utilization of the meter range—installing this in the No. 6 fuel line at the viscosity encountered would mean that the upper limit of meter capacity is reduced by some 20 to 30% of capacity.

In the control device or cabinet, a constant speed motor "G" operates through a mechanical speed changer "J" to drive into a geared mechanical differential device mounted for each of the meters stations "N." Only one setting is made by the operator. This is percentage setting for No. 2 oil.

The input from the meter drives one side of the differential device while the output from the motor-driven source, suitably reduced through the speed changer, drives the other side. In essence then we are saying that the meter rotation must match the rotation established by the blender cabinet. Should these two gears being driven in opposite directions be rotating at slightly different speeds indicating that our metered rate is not exactly matching our required rate, the differential riding between the gears, instead of merely turning on itself by action of these two gears rotating at the same speed, will start to move in one direction or the other. Since this is pinned directly to its center shaft, it will rotate the output shaft from the differential going to an air controller. This will produce a change in air signal to the control valve in the No. 2 fuel line—assuming the differential device for the No. 2 line is the one under consideration.

Closed control Loop

The control valve now moves to a new position to either increase or decrease the flow through the meter so that it will speed up or slow down to match the opposite rotating gear from the blender cabinet drive source. Basically this is what we refer to as a closed control loop or feed back principle in which we are continuously measuring a variable, comparing it to a base condition and adjusting if there is disagreement.

This same operation would follow for the No. 6 flow if we wanted to maintain a constant rate, i.e., the total blend meter would have to match a manually set speed from the drive source and any deviation would call for valve adjustment in the No. 6 fuel line. It is not practical though to make the system operate at fixed rates—this may cause spillage, and prevents operator control. Instead the system is designed to be flow responsive. The operator at the fill nozzle controls the blend rate. Now, instead of using the output from our air controller to position a valve in the No. 6 line, we will use it to adjust the blender cabinet drive speed. In other words, the No. 4 meter "F" paces our system. If the operator starts to cut back at his nozzle, the meter drive into the differential slows and causes the differential to reset the controller. The air signal from this goes to pneumatic position "Y" which slows motor drive to differential. It also delivers a proportionate slower speed to the No. 2 differential system so that the percentage of secondary always remains at the established valve—no matter what the flow rate.

Another feature is incorporated. Should the No. 6 fueloil pump also supply direct to the rack simultaneous with blending, a flow limiting control valve in the No. 6 line starts to throttle

FUEL OIL BLENDING

VISCOSITY - COMPOSITION DATA - TYPICAL STOCKS

USE THIS SHEET TO ESTIMATE BLEND COMPOSITION. A STRAIGHT LINE CONNECTING No.6 & No.2 OIL VISCOSITIES INTERSECTS ANY DESIRED INTERMEDIATE VISCOSITY AT THE CORRESPONDING VOLUME PERCENT OF No. 2 OIL IN TOTAL BLEND.

FOR EXAMPLE GIVEN:
110 SSU No.4 OIL
CORRESPONDS TO 47%
No. 2 OIL.

Ref. No. ED-9479-D4

Chart 2

FUEL OIL BLENDING DATA

CONVERSION OF HEAVY STOCK VISCOSITY

SSU AT 100°F (APPROX.) CONVERTED VISCOSITY
SSU x 1000
SSU x 100
SSF AT 122°F
HEAVY RESIDUAL OIL
ACTUAL VISCOSITY
ENTER CHART AT BOTTOM WITH NO. 6 OIL FUROL VISCOSITY AT 122°F.
FOR EXAMPLE - 93 SECONDS READ CONVERTED VISCOSITY SSU AT 100° AT SIDE = 2150 SECONDS.

Ref. No. ED-9479-D3

Chart 1

when entire pump capacity is thrown to blender. This prevents overspeeding blender and maintains a "lid" on blender capacity, be it 500, 750, 1,000, 1,200 or 1,500 gpm.

Having described a piece of equipment to perform the blending operation, let us now consider how to establish the setting. Generally, viscosity will determine the end product specification, although special applications may call for low sulphur or low pour. In the latter case, it is a matter of actually making sample blends and testing for no simple graphical or mathematical solution is available.

Suppose an end viscosity of 110 SSU @ 100° F. is desired. It is necessary to first determine viscosity of both No. 6 and No. 2. Often this is available on bill of lading. If not, a viscosimeter test can be run for both base components (a Saybolt viscosimeter is recommended for checking blends in any case). Heavy fuels such as No. 6 customarily are reported in units of viscosity Furol at 122° F. It is imperative that for any computation or charting that all units be the same (that is Saybolt seconds, Universal SSU at the same temperature — normally 100° F.). This then requires, if No. 6 is given in Furol seconds at 122° F., that it be converted to SSU at 100° F. CHART 1 provides a curve for this conversion, and an example (93 SSF at 122° F.) is indicated. Having now determined viscosity values for both No. 2 and No. 6 at 100° F. in terms of SSU (example—2150 SSU for No. 6, 38 SSU for No. 2 both at 100° F.), we can plot these on a viscosity-composition curve as shown on CHART 2. By connecting the viscosity points and finding where the 110 SSU line cuts this curve, we can drop a vertical and read percentage of both components—in this case 47% No. 2, 53% No. 6.

Viscosity Tests

Viscosity tests require considerable time and are generally most frequently made to check the heavy oil from a new source of supply or from a different tank received at a different time. Routine checks are desirable to prove that No. 6 oil has not stratified during storage, etc., or to compensate if it is found that there is a variation in the

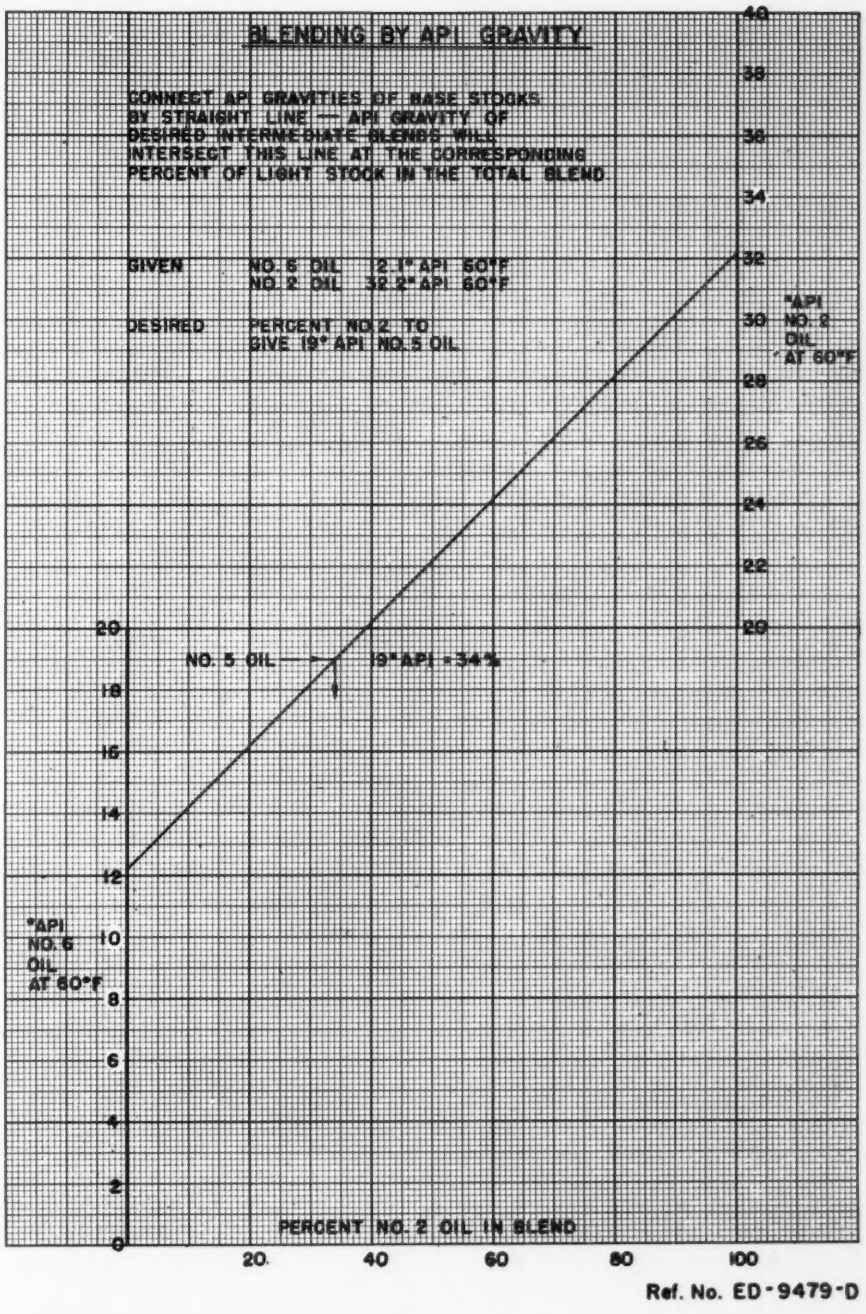

BLENDING BY API GRAVITY
CONNECT API GRAVITIES OF BASE STOCKS BY STRAIGHT LINE — API GRAVITY OF DESIRED INTERMEDIATE BLENDS WILL INTERSECT THIS LINE AT THE CORRESPONDING PERCENT OF LIGHT STOCK IN THE TOTAL BLEND
GIVEN NO. 6 OIL 12.1° API 60°F
NO. 2 OIL 32.2° API 60°F
DESIRED PERCENT NO. 2 TO GIVE 19° API NO. 5 OIL
NO. 5 OIL — 19° API = 34%
°API NO. 6 OIL AT 60°F
°API NO. 2 OIL AT 60°F
PERCENT NO. 2 OIL IN BLEND
Ref. No. ED-9479-D

Fig. 3

No. 6 oil. The No. 2 oil generally is very uniform but it is important for the accuracy of the estimate made from CHART 2 that the actual viscosity be used, not a "book" value. The composition is as much affected by 2 or 3 SSU change in the No. 2 oil as it is by several hundred SSU change in viscosity of the No. 6 oil.

A more convenient test, one which is simple and rapid enough to give frequent daily checks, is the API gravity test. By itself, this test is not accurate enough to control viscosity but it will indicate a change. A good practice would be to spot check several loads during the day by a gravity test and to viscosity check the composite sample resulting from the gravity tests accumulated during the day. The same stocks will have remained at a uniform viscosity as long as the API gravity remains constant. A change in gravity will indicate a viscosity change has occurred and that closer checks on operation and a new blender setting is required.

CHART 3 shows how determination of setting can be made for blends to gravity "spec." In the case of No. 5 oil assume that the requirement is for a 19.0° API blend (at 60° F.). No. 6 oil is 12.1° API at 60° F., and the No. 2 oil is known to be 32.2° API at 60°

F. An intermediate gravity at 19.0° corresponds to 34% No. 2 oil.

The viscosity test is a far more sensitive one and viscosity can change by approximately 10 seconds before an appreciable gravity change can be detected. Also, estimating the hydrometer reading and correcting temperature leaves an uncertainty of about 0.1 degree API which makes it difficult to get an exact correlation of gravity and viscosity.

While the API gravity changes very slowly in comparison to viscosity and for this reason does not make an accurate determination of viscosity possible, it does give a rapid general check so that as long as gravity remains uniform no large viscosity change can have taken place. This is very important in making blender corrections when changing supply tanks or putting new consignments of heavy fuel into a tank containing a previous grade, etc. It indicates when a viscosity test and a change in setting should be made due to a change in the character of the supply stocks.

Company case History

Now, let us review the advantages that developed from an actual installation.

Commonwealth Oil Co., Syracuse, N. Y., had maintained 175,000 barrels of No. 6 and 55,000 barrels of No. 4 storage at its Three Rivers Plant up until 1955. No. 2 fuel was trucked in from Syracuse for incidental storage of 14,000 gallons. It was essential that more capacity be provided because of the growth of No. 2 and No. 4 business was very evident. An under rack loading cost of 3 mills per gallon over barge price represented a costly outlay for increasing No. 2 business. In addition, the cost of backhauling itself cancelled the remaining No. 2 price profit.

Installing an additional tank would solve the problem at a considerable outlay of capital. But what size tank was practical? If the prediction of business growth was too high or low, an additional expenditure or loss on investment would follow. Should it be sized for the predicted business on No. 2 in one year, three years, five or what? This represented a large investment on business subject to short cycle fluctuation. Yet the increase in tank cost is not proportionate to size—the larger the tank, the smaller the per barrel cost. So the economical approach on tank indicates going for large capacity—and a large initial investment with a long term payout.

CHART 4

Cost per Barrel—New York Harbor

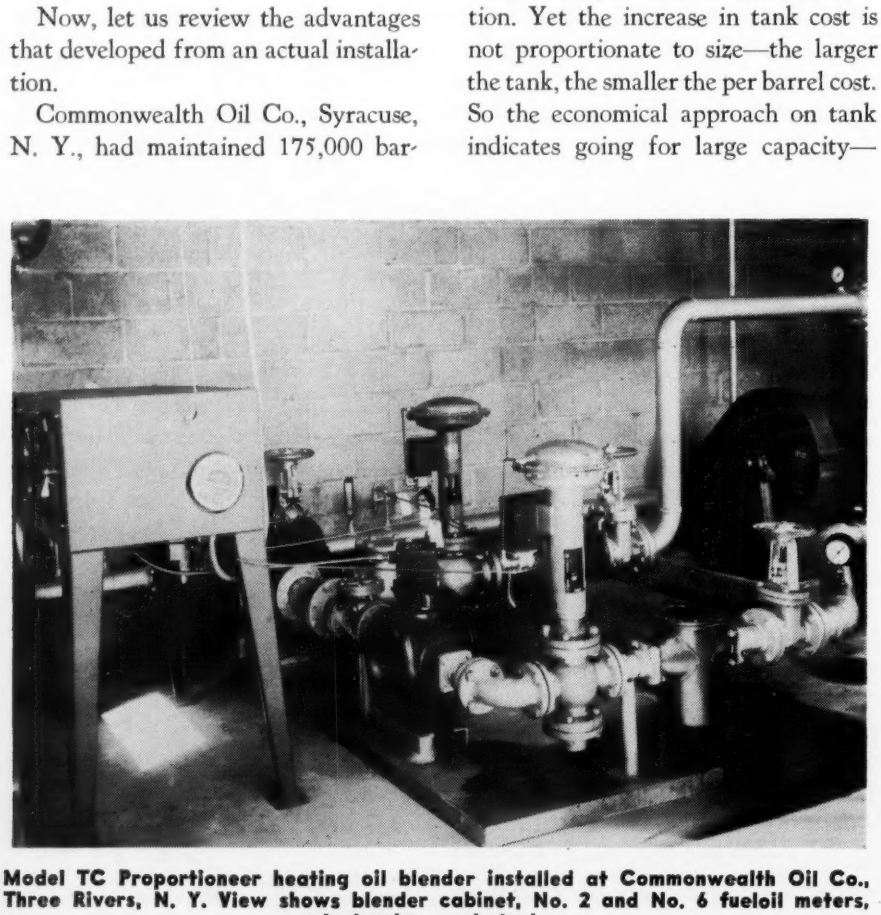
Date	No. 2	Fueloil No. 6	No. 4	49:51 Blend	Blend Saving Per Bbl.	Per Gal.
9/56	$4.22	$2.65	$3.43	$3.42	$0.01	0.2 mills
1/57	4.89	3.30	4.20	4.08	0.12	2.9 mills
8/57	4.47	3.05	3.95	3.75	0.20	4.7 mills

Commonwealth saw a much more economical approach — one which would provide time to see in which direction the business would expand and yet would provide the added facilities needed for a year or two. Convert No. 4 storage to No. 2 and install blending equipment, at a fraction of tankage cost, to directly load No. 4 to trucks. In essence, while this does not increase the storage capacity of the plant it provides for greater flexibility to handle the three grades at no increase in tankage. It eliminates the need for uneconomical use of a large capacity No. 2 fuel tank—for long range business —and keeping No. 6 and No. 4 storage as it was. Of course, it also presented another tremendous advantage —one which proved most beneficial to Commonwealth. Not only is the "going" No. 4 available, but any blend of No. 2 and No. 6 can be turned out to meet particular customer requirements.

Now while the foregoing is concerned primarily with intangibles—except the price of an additional tank —there is a definite saving to be had on the basis of current market price. CHART 4 shows New York harbor price for three dates over a year's period. In this case, Commonwealth's desired end product viscosity was satisfied with a 49% No. 2 and 51% No. 6 blend (this is a somewhat higher percentage on No. 2 than normally is encountered—again indicating that No. 2 viscosity was high). The table shows resultant savings—on harbor prices only—available by blending No. 2 and No. 6 in a 49:51 ratio over purchase of No. 4 oil directly. In New York harbor this straight computation shows that almost half a cent is available per gallon on blending No. 2 and No. 6. Of course, last year at this time the price of No. 4 was down and only 0.2 mills per gallon was indicated.

Since installing the blender, and it

(*Please turn to page 138*)



Model TC Proportioneer heating oil blender installed at Commonwealth Oil Co., Three Rivers, N. Y. View shows blender cabinet, No. 2 and No. 6 fueloil meters, control valves and strainers.

Should fueloil Specs be modified?

It's important to Many, from the equipment Designer to the fueloil Dealer

by D. W. Locklin*

On October ninth at Washington there was held the first meeting in nine years of Technical Committee E of Section D2 of the American Society for Testing Materials. This Committee has to do with recommending fueloil specifications to the National Bureau of Standards for the publishing of Commercial Standards for numerous products. At the meeting were some 50 interested parties, mostly from major oil companies or from large buying sources such as railroads, municipalities, federal government procurement agencies and the like. Only three oilburner manufacturers were present. The chairman of Technical Committee E is Dick Wright, chief engineer of Iron Fireman Mfg. Co., and the secretary is Dave Bottrill of the Oil Heat Institute, New York.

Several papers were presented. The one reproduced here was not only the first but was the one most directly related to present and proposed fueloil specifications for domestic heating. Other papers of the meeting will be reproduced or digested in later issues of the magazine.

It is significant that the broad subject of fueloil characteristics is being studied again by authoritative sources after the years since the last such investigation. Obviously the quality of fueloil produced by major refiners today is high but it is nonetheless desirable to review the official specifications from time to time as an index of progress within the oil industry.

SOME OF THE MOST IMPORTANT fuel properties from the standpoint of the residential burner designer are ones that are not covered in the ASTM or Commercial Standards for No. 1 and No. 2 grade fueloils. I am referring to properties governing stability, both storage stability and stability in normal handling through the burner oil supply equipment to the combustion zone.

Over the past few years, field problems with fueloils have been more nearly associated with the fuel supply system which introduces the fuel to the burner, rather than with burning qualities in the burner itself.[1] There is a tendency to think of the effects of instability as storage and screen clogging problems, but instability also shows itself in other ways.

During one rash of instability troubles in the field, a dealer reported that 125 service calls in one day were necessary to cope with gel deposits in oil lines and valves. This problem was not confined to one area, to one refiner's fuel, or to one burner type. After some investigation with the cooperation of some refiners, we were told that a possible cause may have been mercaptan sulphur in the fuel reacting with copper or brass parts in the oil supply and metering system; we understand that refinery treatments have since been developed which will satisfactorily eliminate this problem.

Although there have been considerable advances in technology of additives in coping with stability problems, there is evidence which suggests that additives themselves have introduced new problems. Some additives in use a few years ago appeared to contribute to and act as a binder in the formation of hard carbon deposits at the flame rim of vertical rotary wall-flame burners; this deposit seriously affected the ignition characteristics.

Commercial Standard specifications for fueloils offer little protection against problems of this nature. Tests to evaluate the screen clogging tendency of fuels may not be adequate to predict such deposits, and there may not be complete agreement among technologists as to the test procedures which are adequate for prediction. However, with the great effort devoted toward stability and moisture sensitivity by the refiners over the past ten years,[1] it would seem that some common ground for agreement should exist so that acknowledgement of stability test methods may be included in the Standards specifications.

Due to the technical nature and complexity of the problem, the oilheating industry must look to the refiners for the development of such tests. It may well be that adequate laboratory test procedures have been developed, but these must be correlated with field performance on the various types of burners in service. The accomplishment of a satisfactory and permanent solution to this formidable problem would be a worthwhile contribution to the oilheating industry.

In recent home building, there has been a trend toward lower capacity heating equipment. Over half of the high pressure nozzles now sold are for firing rates of 1.0 gph or less, and nozzles under 2.00 gph account for nearly 90% of total nozzle sales. The most popular single size is 1.0 gph.

Lower capacity burners are generally more critical of adjustment and fuel characteristics than higher capacity burners. This is particularly true with respect to atomization; proper atomization and stable spray pattern with low capacity nozzles require lower viscosity fuels than required by high capacity nozzles.[2] Ignition characteristics also are affected adversely by lower capacities so that front-end volatility assumes greater importance.

In terms of burning quality, a number of factors are of interest to the residential burner designer. There have been numerous programs both published and unpublished, aimed at correlation of fuel properties with smok-

*Project Engineer, Timken Silent Automatic Div., Scaife Co., Oakmont, Pa.

ing tendency and ignition characteristics.

Work sponsored by the Oil-Heat Institute on a pressure type burner test unit[3] has shown correlations between smoking tendency with various indices; smoke data with six widely different fuels were found to correlate with API gravity, diesel index, carbon-hydrogen ratio, and burning index. (See FIGURE 1.)

The burning index of Reed and Hersberger[4] represents the range of adjustment permissible for relatively clean combustion, determined by actual combustion tests of various oils in a rotary wall-flame burner; API gravity and 50% distillation point were then correlated to this rating. Sullivan and Glendenning,[5] firing kerosene and straight run blends of cat cracked distillates in a pressure burner, found a relationship between smoke production and two of those indices: per cent aromatics and diesel index, though poor correlation was found for the two individual components of diesel index. Cauley and Delgass[6] have reported that good correlation was observed between the relative performance of domestic fueloils and carbon-hydrogen ratio, empirically determined.

In an attempt to provide further information as to the effect of fuel properties on ignition, cold starting and smoke characteristics of vertical rotary wall-flame burner equipment, we initiated a study in the laboratory of the Timken Silent Automatic Division several years ago. Due to the press of other projects, we were not able to extend the program to as many fuels as originally intended. However, data on five different fuels showed some preliminary trends.

The fuels covered a range of properties as follows: API Gravity 22 to 32, 10% point 450 to 490, viscosity (SSU at 100F) 35 to 39, Aniline Point 85 to 135. In this work, the relative performance of the fuels were compared with many different fuel properties and indices.

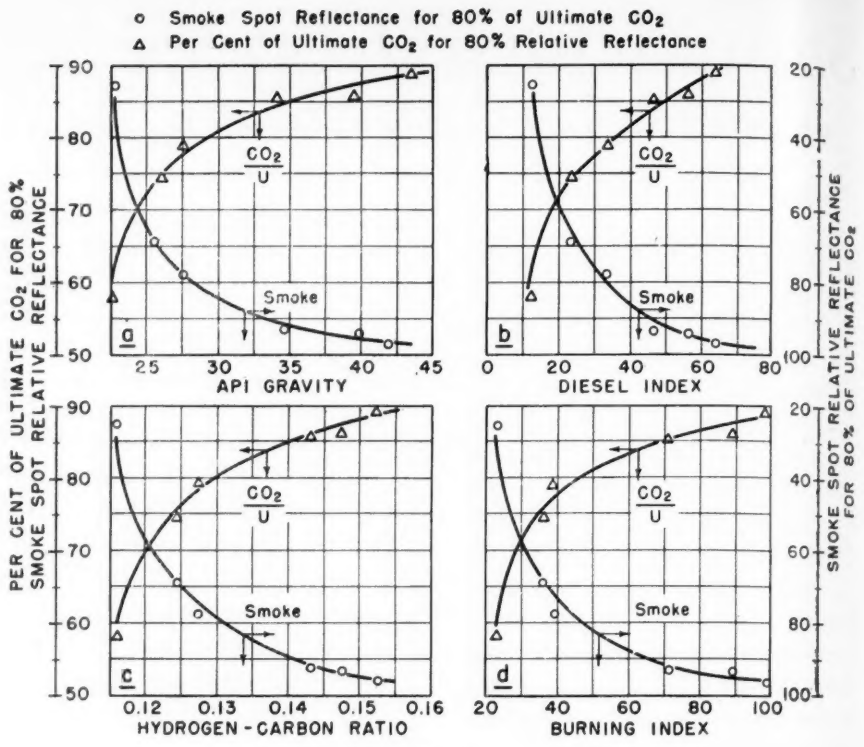


Fig. 1

Some of the properties normally associated with ignition characteristics were not found in themselves to be directly indicative of ignition characteristics. Flash point and 10% point did not correlate with ignition or cold starting performance. Viscosity correlated fairly well with ignition performance and very well with overall cold starting performance.

The stack coefficient in FIGURE 2 is defined as the time in minutes required to achieve 60% of the rise eo equilibrium stack temperature from a cold start, it is indicative of the speed with which ignition and flame stabilization are achieved. The best single property for correlating smoke performance was aniline point, although API gravity and diesel index were fair. Various combinations of properties correlated with smoke as illustrated in FIGURE 3 for a constant CO2 of 12.5%.

Much more laboratory data of this nature is needed, such combinations of factors show considerable promise as indices of combustion for oils of widely different character.

Laboratory studies under controlled conditions are helpful in determining trends of burner sensitivity to fuel characteristics, but the establishment of permissible limits of fuel characteristics must also be based on field performance on many burner types under varying conditions of adjustment and load. Many variables must be considered: type and condition of burners, type and condition of furnaces or boilers, furnace or boiler capacities; heating loads, firing rate, burner adjustments, air adjustments, ignition adjustments, fuel filtering, moisture in fuels, pumps and fuel handling equipment, design and condition of refractories, chimney and flue performance, control operation, and fuel characteristics. The number of variable present in the field defies a conclusive determination of such limits, so that a combination of judgment and experience is for interpretation.

1957 Burner Fuels Survey*

	Proposed Limits	*% Samples Within Limit*	*Avg.*	ASTM D 396 CS12-48
API gravity @ 60° F.	30 min.	94.5	35.0	26 min.
Viscosity, cks @ 100° F.	3.2 max.	97.6	2.54	4.3 max.
10% Point, deg. F.	450 max.	89.1	428	440 max.**
End Point, deg. F.	675 max.	100.0	631	..
Carbon Residue, Rams. %	.35 max.	99.2	.128	.35 max.
Diesel Index	35 min.	95.3	49***	..
Suitable stability tests are needed				

*Includes 128 No. 2 grade samples reported for eastern, Southern and Central regions.
**May be specified for other than atomizing burners.
***Determined from average properties.

As a result of laboratory and field experience with wall-flame burners, we have developed some opinions relative to fuel properties required for reliable field performance. In order to include similar judgment concerning fuels needed for proper operation of high pressure atomizing burners, we invited E. O. Olson, chief engineer, Delavan Mfg. Co., to give us the benefit of his experience with many designs of high pressure burners. His proposed fuel property limits for reliable performance of low capacity pressure burners is in close agreement with our own for small wall-flame burners. We feel that fuel properties must be within the limits shown in the accompanying table for the most efficient field operation of many existing burners firing 1 gph or less.

Most fuels marketed as No. 2 fueloils fall within these limits as shown by a comparison with fuel properties reported in the Eastern, Southern and Central Regions, by the 1957 Burner Fuel Survey.[7] The second column in the table shows the percentage of samples falling within the proposed property limits. Average properties are shown in column 3 and commercial standard specifications are shown in column 4. We believe this demonstrates that refiners have reached conclusions as to practical limits which closely compare to those proposed here for No. 2 fueloils.

Quality competition among oil refiners is currently maintaining a much higher quality level than is required by the Commercial Standards. Refiners seem to be aware that it is not practical to market a fuel with properties near the fringes of the Commercial Standards specifications. I would recommend that any consideration of revised fueloil specifications should be made with this realistic point of view and with the addition of stability tests.

Specifications in themselves can never hope to anticipate all the problems which may arise in the future. There needs to be an awareness on the part of refiners that any marked change in fuel or additive characteristics may be a potential danger to the reliability of burners now in service. Activity in the burner laboratories of many refiners and manufacturers has contributed greatly in keeping abreast of such developments. Continued effort is imperative to maintain the performance and reliability of oilheating.

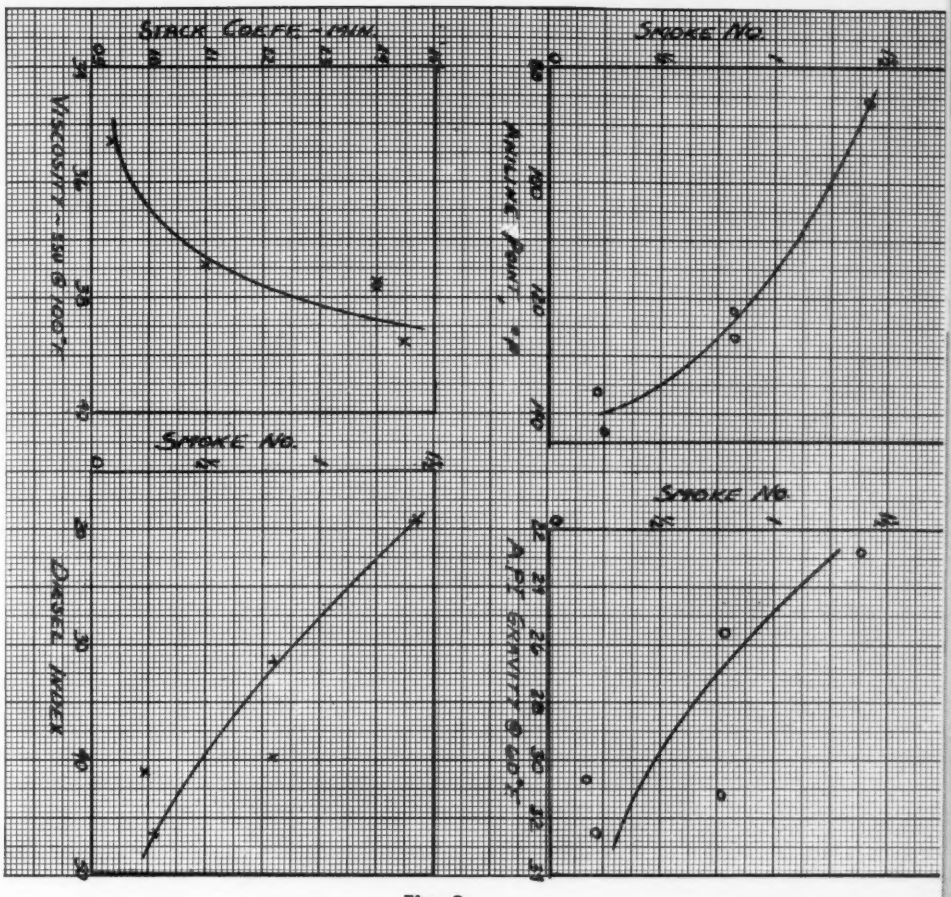


Fig. 2

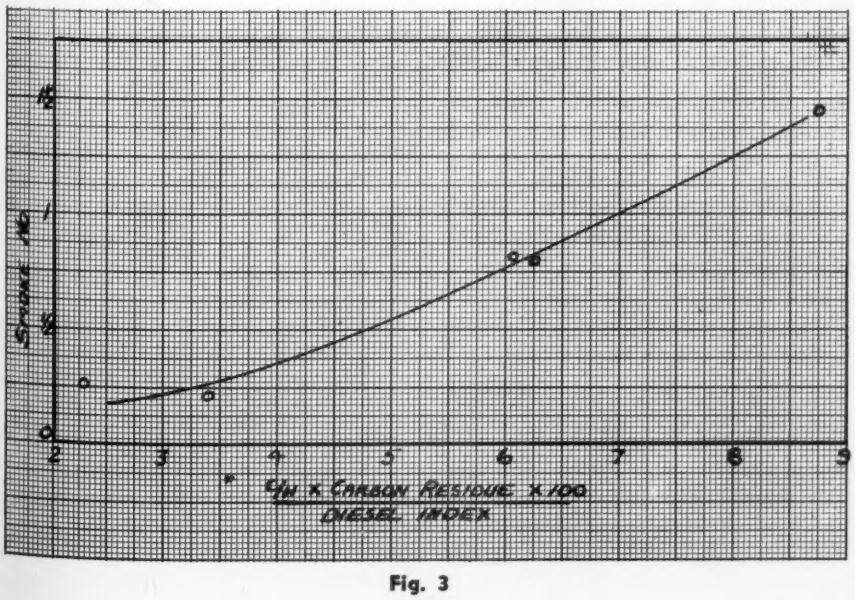


Fig. 3

REFERENCES

1. Fueloil has improved in Quality, by W. A. Sullivan (Fueloil & Oil Heat, July 1956).

2. Half-gallon Burners are practical, by E. O. Olson (Fueloil & Oil Heat, September 1952).

3. Rating of Fueloils in a test Unit, by D. W. Locklin and G. V. Parmelee (Ashve Transactions, 1951).

4. Burning Index for Distillates, by J. C. Reed and A. B. Hersberger (Fueloil & Oil Heat, Januayr 1947).

5. Tomorrow's Fueloil, by W. A. Sullivan & D. B. Glendenning (Fueloil & Oil Heat, May 1945).

6. Carbon-hydrogen Ratio, by S. P. Cauley & E. B. Delgass (*The Oil & Gas Journal*, July 27, 1946).

7. Burner Fueloils, 1957 by O. C. Blade, Bureau of Mines (U. S. Department of the Interior, September 1957).

Service Calls per Degree-day measure two-way radio Economics

by Tom Carson

SEVERAL YEARS AGO, a large Baltimore distributor of No. 2 fueloil at retail deemed it advisable and necessary to provide with two-way radio equipment all of the cars utilized by approximately 70 oilheating service mechanics, including the vehicles of the service manager and four supervisors. This concern also installed two-way radio equipment in 15 of its 60 fueloil trucks operating in the metropolitan Baltimore area, feeling that it was necessary to provide this facility only for those trucks supplying the outlying or periphery area. The remaining 45 trucks were supplied frequently enough from subbulk stations as to render the use of two-way radio unnecessary.

This article will not deal with the economies attained through the use of two-way radio in fueloil delivery trucks. No factual study has been made of this aspect.

But the economies and benefits in connection with the use of two-way radio in cars of service mechanics was intensely studied from the first day the program was started.

Ends phone Calls

Naturally, there was immediately an abrupt cessation of the 10¢ telephone calls, which could be measured precisely, and the cost of the two-way radio equipment and maintenance was also known to an accurate degree, but the big question concerned itself with what economies had been effected in the way of accelerated service and the elimination of numerous unnecessary repeat calls due to more intense and quicker supervision.

At first, the company's officials were inclined to classify these expected economies under the head of "intangible benefits," which could not be measured to any reasonable extent and so expressed in dollars. However, the idea of being able to calculate this alleged intangible benefit to a reasonable degree became a challenge, and eventually a solution or a formula was devised, which the writer believes is reasonably sound.

The basic premise upon which this formula is founded stems from the assertion that there is a constant relationship between the weather and the number of service calls per account in a given area. In other words, the formula is the per cent of a service call per degree-day per account in a given area in the same operation. This formula is not a true constant, but experience in the same operation will show that a definite pattern or curve is set, by means of which the distributor or dealer can calculate his expected service reaction in number of calls against a normal degree-day year, provided there is no abrupt change or deviation from his normal procedures.

Weather and service Calls

As evidence of this contention, the writer refers to a chart known as Exhibit "A." The right hand line shows the curve or variant "K," which reflects the formula applied to five years of mechanical service handling prior to the introduction of two-way radio. The figures supporting the curve are shown in the right hand column of the chart, and it will be noted that the curve, or factual "K," follows a distinct pattern.

The left hand line, showing the numerals "1" and "2," represents the experience during the first two full years with two-way radio in use in the cars of all service mechanics and suprvisors. Note that the curve follows the same general line, with the difference between the two lines reflecting the measurable element of economy effected by the only material change made between the two periods, namely, the use of two-way radio.

Examining the chart, we can follow the experience at the end of the second year with the use of two-way radio shown as "2" on the chart. The calculation reads as follows:—

Factor without two-way radio	.000467
Actual factor with two-way radio	.000424
Service reduction per call per degree-day per account	.000043

In the fueloil year ending May 31, 1957, there were 3,884 degree-days, which multiplied by the factor .000043 equals .167012 calls per total degree-days. By multiplying .167012 by the total number of accounts, 30,643, we arrive at a saving of 5,118 calls for the operation during the fueloil year ending May 31, 1957.

The company involved has found from actual experience that the average time per call, including all forms of lost time, equals 1.5 hours, which in turn means a saving of 7,677 service man hours. The company has further computed its cost of wages, transportation, fringe benefits, etc., at $3.50 per hour, which in turn means a monetary saving of $26,869.50.

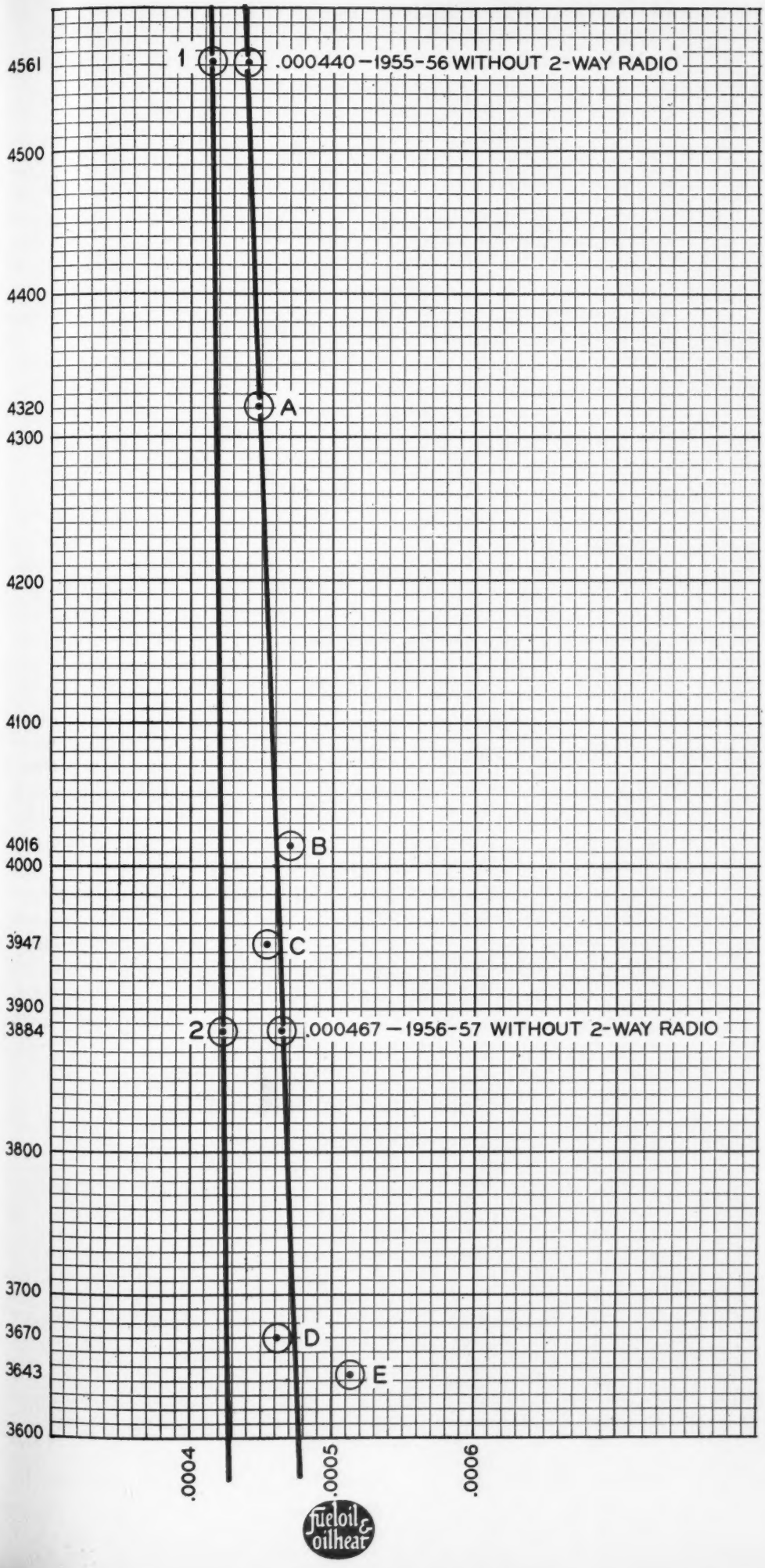
Cost of Equipment

For the information of the reader, the cost of this two-way radio equipment during the particular year, namely, the fueloil year ending May 31, 1957, amounted to approximately $16,700.00. The company further estimates the saving in 10c telephone calls would normally have amounted to approximately $4,700. Consequently, the total saving is approximately $31,500 against an outlay for two-way radio of approximately $16,700.

Where a dealer has been in operation for a sufficient number of years to construct a similar curve, it is certainly reasonable to assume that he can measure the benefits or setbacks occurring from any abrupt change in his operating technique with regard to mechanical service. This formula can be utilized not only in measuring the benefits secured from two-way radio, but savings secured from any other appreciable change in technique which the dealer may institute.

The formula will also give the dealer a very good idea of his service call expectancy predicated upon a normal winter, and likewise, the effect that it will have upon his service demand, in the event the weather either exceeds or falls below the normal for his particular area. While it is true that this formula is not an absolute constant and can be readily called a variant "K", yet there is enough consistency in the pattern of the curve to be of decided value.

EXHIBIT "A"



YEAR 1950-51

A
SERVICE CALLS – 41,590
DEGREE DAYS – 4,320
NO. OF ACCOUNTS – 21,453
FACTOR – .000449

YEAR 1951-52

B
SERVICE CALLS – 42,065
DEGREE DAYS – 4,016
NO. OF ACCOUNTS – 22,286
FACTOR – .000470

YEAR 1949-50

C
SERVICE CALLS – 35,099
DEGREE DAYS – 3,947
NO. OF ACCOUNTS – 19,535
FACTOR – .000455

YEAR 1948-49

D
SERVICE CALLS – 30,527
DEGREE DAYS – 3,670
NO. OF ACCOUNTS – 17,968
FACTOR – .000463

YEAR 1953-54

E
SERVICE CALLS – 51,260
DEGREE DAYS – 3,643
NO. OF ACCOUNTS – 27,533
FACTOR – .000511

YEAR 1955-56

1
SERVICE CALLS – 59,349
DEGREE DAYS – 4,561
NO. OF ACCOUNTS – 31,412
FACTOR – .000414

YEAR 1956-57

2
SERVICE CALLS – 50,519
DEGREE DAYS – 3,884
NO. OF ACCOUNTS – 30,643
FACTOR – .000424

NOTE: YEAR 1954-55 OMITTED BECAUSE PART OF SEASON'S SERVICE WAS PERFORMED WITH 2-WAY RADIOS AND PART OF SEASON WITHOUT 2-WAY, RADIOS

fueloil & oilheat

Range Oil Sales by Grades and States

(Thousands of 42-gallon barrels)

	Kerosene	No. 1 Fuel	Total 1956	Total 1955
NEW ENGLAND STATES				
Mass.	9,932	702	10,634	11,556
Conn.	4,382	321	4,703	4,849
R. I.	2,714	102	2,816	2,601
Maine	2,991	231	3,222	3,341
N. H.	1,472	120	1,592	1,457
Vt.	579	23	602	606
	22,070	1,499	23,569	24,410
MIDDLE ATLANTIC STATES				
N. Y.	8,175	609	8,784	8,508
N. J.	3,702	225	3,927	4,065
Penna.	2,348	351	2,699	2,642
Md.	1,564	51	1,615	1,639
Dela.	676	20	696	637
D. of C.	188	6	194	172
	16,653	1,262	17,915	17,663
MIDWESTERN STATES				
Illinois	3,407	2,868	6,275	6,149
Mich.	3,372	2,631	6,003	6,248
Wisc.	1,538	1,684	3,222	3,320
Ind.	2,241	1,016	3,257	3,330
Minn.	1,981	1,121	3,102	2,698
Mo.	1,857	816	2,673	2,462
Iowa	1,635	1,034	2,669	2,754
Ohio	1,636	582	2,218	2,166
Nebr.	681	173	854	916
S. Dak.	422	135	557	631
Kans.	859	145	1,004	828
N. Dak.	887	114	1,001	742
	20,516	12,319	32,835	32,244
WESTERN STATES				
Colo.	205	106	311	306
Mont.	160	125	285	271
N. Mex.	188	34	222	178
Calif.	82	..	82	90
Idaho	20	75	95	109
Wyo.	41	32	73	92
Utah	26	75	101	114
Ore.	3	..	3	5
Wash.	3	..	3	4
Ariz.	..	..	..	2
Nev.	..	..	..	..
	728	447	1,175	1,171
SOUTHERN STATES				
N. C.	8,832	292	9,124	8,180
Texas	1,464	349	1,813	1,941
S. C.	3,861	152	4,013	3,400
Ga.	1,888	105	1,993	1,931
Va.	2,417	124	2,541	2,484
Fla.	1,889	88	1,977	1,881
Tenn.	1,643	66	1,709	1,650
Ark.	702	75	777	674
Okla.	506	96	602	753
La.	643	99	742	648
Ala.	768	53	821	933
Ky.	828	386	1,214	1,080
Miss.	521	23	544	465
W. Va.	121	..	121	197
	26,083	1,908	27,991	26,217
TOTAL UNITED STATES				
Total	86,050	17,435	103,485	101,705

Bureau of Mines Report shows Gain for heating Oils in 1956

SALES OF distillate fueloils continued to gain in 1956, but at a lower rate than in 1954 and 1955, according to a survey by the Bureau of Mines, United States Department of the Interior. Sales of both residual fueloil and kerosene in 1956 were just slightly higher than in 1955. The market for distillate grades of fueloil was up 6% in 1956, compared with a 10% gain in 1955, while an increase of less than 1% in deliveries of residual fueloil in 1956 compares with a 7% increase in 1955. On the other hand, a gain of less than 1% for kerosene in 1956 contrasts to a 2% decline in 1955.

All principal uses of distillate fueloil showed a gain in 1956, with the exception of sales to gas and electric power plants which continued the downward trend of recent years. The larger increases were registered in totals reported as bunker fuel sold to vessels and used as fuel by oil companies.

Weather Factor

Warmer weather in 1956 as measured by degree-days resulted in the 6% gain for heating oil, compared with about 12% in 1955. Sales of distillate fueloils, including diesel fuel, to railroads gained only 6% in 1956, against 9% in 1955.

The gain of 40% registered for exports of distillate fueloils last year, compared with less than 2% in 1955, was due largely to the closing of the Suez Canal and the need for replenishing the European supply normally received from the Middle East. Exports of residual fueloil declined 17% in 1956, and exports of kerosene continued the downward trend of recent years. However, the decline in kerosene exports was less than 1% compared with 33% losses in 1954 and 1955.

Imports up

Imports of distillate fueloils gained 17% in 1956, down from a 38% increase reported in 1955. The gain for residual grades in 1956 was 7%, also lower than the 18% increase reported for 1955. Except for an insignificant amount received in 1956, no kerosene has been imported in recent years.

Fractional percentage gain in residual fueloil sales in 1956 was due largely to the 30% drop in railroad requirements, to smaller quantities credited to gas and electric power companies and to slightly lower use of heavy oils for fuel by oil companies. Small percentage gain in the sales of heavy fueloils for heating in 1956 resulted from the warmer weather prevailing during the year.

Kerosene sold for range oil showed a minor gain of 2% in 1956, compared with a slight decline the year before.

A. T. Coumbe and W. G. Messner, Bureau of Mines, prepared the report, designated Mineral Market Report, No. MMS 2681.

Fueloil Sales 1952-1956 by Uses

(In millions of 42-gallon barrels)

DISTILLATE						RESIDUAL					
1952	1953	1954	1955	1956		1952	1953	1954	1955	1956
263	267	304	339	360	Heating	79	82	79	86	88
16	16	15	17	17	No. 1 sold as range	..	..	..	..	..
68	75	77	85	90	Railroads	41	29	16	15	11
17	17	16	17	19	Vessels	110	114	109	115	117
8	7	6	6	5	Utilities	71	85	71	76	74
43	42	42	44	45	Industrial	158	167	160	173	178
8	8	8	8	10	Oil Company Fuel	54	51	52	53	53
10	10	9	11	11	Armed Forces	37	31	27	28	31
46	47	49	54	59	All other uses	6	6	7	10	10
479	489	526	581	616	Total United States	556	565	521	556	562
34	32	24	25	34	Exports	28	26	27	34	28
513	521	550	606	650	Grand Total	584	591	548	590	590

Heating Oil Sales by Grades and States U. S. Bureau of Mines

(Thousands of 42-gallon barrels)

				Total Distillate		Districts 1			Total Residual		Grand Total	
No. 1	No. 2	No. 3	No. 4	1956	1955	NEW ENGLAND	No. 5	No. 6	1956	1955	1956	1955
1,240	30,475	192	52	31,959	30,057	Massachusetts	2,112	6,586	8,698	8,685	40,657	38,742
1,127	13,178	158	843	15,306	13,378	Connecticut	1,564	2,822	4,386	4,305	19,692	17,683
172	4,452	12	1	4,637	4,115	Rhode Island	373	2,204	2,577	2,586	7,214	6,701
211	4,751	14	..	4,976	4,416	Maine	79	446	525	487	5,501	4,903
114	4,520	..	..	4,634	4,092	New Hampshire	96	139	235	207	4,869	4,299
115	1,377	17	2	1,511	1,375	Vermont	13	128	141	144	1,652	1,519
2,979	58,753	393	898	63,023	57,433		4,237	12,325	16,562	16,414	79,585	73,847
No. 1	No. 2	No. 3	No. 4	1956	1955	2 MID-ATLANTIC	No. 5	No. 6	1956	1955	1956	1955
3,317	48,731	476	2,943	55,467	53,836	New York	2,715	14,642	17,357	17,268	72,824	71,104
1,399	26,806	209	2,256	30,670	28,807	New Jersey	2,140	4,273	6,413	6,358	37,083	35,165
1,973	26,729	593	244	29,539	28,104	Pennsylvania	1,885	2,623	4,508	4,493	34,047	32,597
635	13,400	14	132	14,181	12,618	Maryland	598	2,076	2,674	2,681	16,855	15,299
369	2,829	16	136	3,350	3,183	Dist. of Columbia	331	1,395	1,726	1,780	5,076	4,963
165	2,359	11	2	2,537	2,260	Delaware	128	282	410	351	2,947	2,611
7,858	120,854	1,319	5,713	135,744	128,808		7,797	25,291	33,088	32,931	168,832	161,739
No. 1	No. 2	No. 3	No. 4	1956	1955	3 MIDDLE WESTERN	No. 5	No. 6	1956	1955	1956	1955
3,555	13,806	3,032	46	20,439	19,064	Illinois	3,743	3,772	7,515	7,463	27,954	26,527
5,202	13,207	606	169	19,184	17,822	Michigan	1,070	1,742	2,812	2,841	21,996	20,663
2,515	9,684	590	118	12,907	12,259	Minnesota	835	753	1,588	1,507	14,495	13,766
2,101	9,452	624	57	12,234	11,468	Wisconsin	651	376	1,027	1,029	13,261	12,497
3,347	5,667	220	365	9,599	8,763	Ohio	578	513	1,091	1,049	10,690	9,812
2,781	5,574	1,091	165	9,611	9,196	Indiana	883	699	1,582	1,572	11,193	10,768
2,470	4,690	251	3	7,414	6,331	Iowa	503	162	665	640	8,079	6,971
1,410	3,625	543	52	5,630	5,432	Missouri	1,722	845	2,567	2,511	8,197	7,943
722	2,006	202	12	2,942	2,761	Nebraska	178	55	233	210	3,175	2,971
321	1,616	34	31	2,002	1,776	North Dakota	78	43	121	61	2,123	1,837
631	1,297	73	1	2,002	1,795	South Dakota	39	63	102	75	2,104	1,870
650	930	29	1	1,610	1,601	Kansas	397	266	663	689	2,273	2,290
25,705	71,554	7,295	1,020	105,574	98,268		10,677	9,289	19,966	19,647	125,540	117,915
No. 1	No. 2	No. 3	No. 4	1956	1955	4 WESTERN	No. 5	No. 6	1956	1955	1956	1955
4,861	..	7,821	..	12,682	13,407	Washington	1,792	1,822	3,614	3,501	16,296	16,908
2,131	..	4,139	..	6,270	6,597	Oregon	1,109	875	1,984	2,039	8,254	8,636
1,188	..	2,845	..	4,033	4,505	California	1,020	3,793	4,813	4,494	8,846	8,999
786	889	251	34	1,960	1,945	Idaho	225	152	377	345	2,337	2,290
205	511	243	34	993	929	Montana	100	101	201	184	1,194	1,113
310	615	157	..	1,082	1,050	Colorado	92	305	397	422	1,479	1,472
162	..	332	..	494	513	Nevada	58	28	86	88	580	601
254	664	177	56	1,151	1,104	Utah	265	118	383	362	1,534	1,466
53	..	210	..	263	277	Arizona	2	6	8	2	271	280
84	413	69	8	574	484	Wyoming	30	22	52	50	626	534
31	106	21	..	158	153	New Mexico	21	36	57	37	215	190
10,065	3,198	16,265	132	29,660	30,964		4,714	7,258	11,972	11,525	41,632	42,489
No. 1	No. 2	No. 3	No. 4	1956	1955	5 SOUTHERN	No. 5	No. 6	1956	1955	1956	1955
1,221	6,979	9	162	8,371	7,982	Virginia	261	917	1,178	1,150	9,549	9,132
620	4,240	105	..	4,965	4,776	North Carolina	102	117	219	199	5,184	4,975
238	1,683	6	2	1,929	1,335	Texas	852	486	1,338	1,275	3,267	2,610
279	2,043	51	6	2,379	2,252	Florida	141	987	1,128	1,096	3,507	3,348
251	944	78	1	1,274	1,141	Georgia	122	282	404	423	1,678	1,564
153	689	8	..	850	799	Tennessee	31	155	186	175	1,036	974
264	1,384	26	..	1,674	1,454	South Carolina	90	198	288	286	1,962	1,740
337	897	22	51	1,307	1,218	Kentucky	27	68	95	96	1,402	1,314
58	630	7	1	696	692	Alabama	65	70	135	117	831	809
52	561	69	7	689	659	Louisiana	207	418	625	571	1,314	1,230
84	504	1	3	592	419	West Virginia	56	47	103	82	695	501
76	432	15	..	523	467	Oklahoma	72	65	137	138	660	605
45	268	12	..	325	300	Arkansas	53	122	175	155	500	455
36	203	..	13	252	248	Mississippi	1	1	2	2	254	250
3,714	21,457	409	246	25,826	23,742		2,080	3,933	6,013	5,765	31,839	29,507
No. 1	No. 2	No. 3	No. 4	1956	1955	TOTAL UNITED STATES	No. 5	No. 6	1956	1955	1956	1955
50,321	275,816	25,681	8,009	359,827		Total U. S. 1956	29,505	58,096	87,601		447,428	
50,315	256,755	24,898	7,247		339,215	Total U. S. 1955				86,282		425,497

OILHEATING MARKET REPORTS*

Pittsfield, Mass.

BERKSHIRE COUNTY, Mass., covers the western portion of the state. With an area 934 square miles, it is quite large to consider as a single oilheating market were it not for the fact that it is a distinct community because of its mountainous separation from the rest of the state.

The earliest measure of oilheating in Berkshire County was, of course, the ration data of 1945. At that time there were 3,026 oilfired central heating plants and 19,434 homes using oil space heaters. The central heating users represented just 3% of those in all of Massachusetts. By 1950 the census shows 9,850 oilfired central heating systems in the county which was only 2.3% of the state as a whole.

In the 1950 census we found that 69% of all dwelling units were heated with boilers or furnaces. Six years later or at the end of 1956 we learn that 85% of the one and two family homes are equipped with central heating plants. During that period there were built in the county 3,745 new homes, practically all of them having central heating plants. We conclude that at the end of 1956 residential heating in Berkshire County was served by the three principal fuels as follows: (Comparative 1950 figures are included.)

1950		*1956*
13,855	Coal	6,000
1,055	Gas	3,000
9,850	Oil	20,200
1,230	Other	
25,990	TOTAL	29,200

Natural gas came to Berkshire County in 1953 and in its first three years was used as the heating fuel in approximately 1,000 new homes. Noticing that this fuel was serving slightly over 1,000 existing homes we conclude that an additional 1,000 gas heating customers have resulted from coal conversions.

Competitive Fuels and Costs

Nearly all coal burned in the county is anthracite. The sizes for hand firing sell at $28 a ton and average 13,600 Btu per pound. This is equivalent to 10.7¢ per therm or 100,000 Btu. The stoker firing sizes averaged $22.75 per ton and average 13,150 Btu per pound, or 8.7¢ per therm.

The utility supplies straight natural gas of 1,000 Btu per cubic foot. It has a very complex rate structure combining a commodity charge and a demand charge. If it were not for the demand charge the home heating rate would average approximately 8¢ per therm. However, the demand charge adds $2 per month for each 25,000 Btu input setting of the burner. This charge is uniform in all months regardless of what fuel is burned. A home with a firing rate setting of 100,000 would pay $8 per month demand charge around the year and smaller homes proportionately.

If this rate structure does nothing else, it certainly confuses the oilman on cost comparisons and makes it difficult for the gas user to estimate his expense. In general, however, the fueloil men acknowledge that gas heating costs are fairly well above oilheating in any conventional home. Probably in a typical instance they range from a quarter to a third higher. The oilmen know that gas is getting the lower priced new home market because of its cheaper heating equipment. They also know that fuel cost differences are not too significant when the utility is pushing for business.

No. 2 fueloil at the close of 1956 was selling at 15.4¢ a gallon or 11¢ a therm. This market does not use summer discounts nor bracket pricing by drop sizes so the one price applies across the board.

Fueloil Distribution

The oilmen interviewed in this market estimate that the average No. 2 fueloil customer uses normally 1,841 gallons in a season. On that basis the 20,200 residential heating accounts require 37,188,200 gallons. On the other hand, the estimates of the total Berkshire County market for No. 2 oil were 42,750,000 gallons. The difference between the two demand estimates is accounted for by the small commercial and apartment users having oilburners that use the same type of fuel. There are approximately 1,200 such accounts in the county and they use an average of 4,635 gallons each.

In the opinion of the oilmen consulted approximately 88% of this oil is supplied to the market by integrated or major oil companies and 12% by independent terminal operators. This, of course, is at the wholesale level. At the retail level the major companies sell only about 6% of total No. 2 fueloil and the independent fueloil distributors have the other 94%. Only one or two of the oil men interviewed believed that the independent terminal operator does any retail business.

In contrast to eastern Massachusetts, we find in Berkshire County that only about 28% of the fueloil marketers buy "under the fill," loading at another company's bulk plant. This means that 72% of the companies have their own plants. The gallonage sold "under the fill" to non-bulk plant distributors is approximately 22% of the total in the market.

Automatic deliveries have reached a good level of refinement, better than the nation as a whole. In Berkshire County 85% of the customers are served with automatic deliveries as against 84% for all of New England and 80% for the nation as a whole. We find this market having 58% of the consumer tanks fitted with automatic fill signals of the VENTALARM type. This compares with a national average of 53%. All of the larger fueloil marketers offer customer budget plans with an estimated 27% of all accounts using this method of payment.

Following the pattern of most of the New England area we find that only 8% of the 55 fueloil marketers in the county also sell gasoline and automotive products. On the other hand 55% of the companies sell oilheating equipment which pretty well establishes the basic industry profile. Again we find that 19% of them are also in the coal business.

Market Concentration

With few exceptions the fueloil distributors of Berkshire County are of modest size. Only three have as many as four trucks delivering fueloil. Of the estimated total of 55 companies in the county, 36 have listings in the Pittsfield classified phone directory and their number of trucks was known to the group. Details are in the table.

Fairly typical of New England fueloil marketing, the table shows that half of the home heating oil business is done by one or two truck operators. The total number of fueloil trucks operating in the county is estimated at 110, and the average gallonage delivered in a season is just under 400,000. Among the larger operators represented at a recent luncheon, the average is a half million gallons to the truck.

Oilheating Equipment Sales

The composite opinion of the oil men interviewed at Pittsfield is that 54% of oilheating equipment sales in 1956 were made by companies in the fueloil business; 32% were by plumbing or heating companies not identified with fueloil; the remaining 14% were sold and installed by burner service specialists without fueloil departments. The bulk of these last would be replacement sales if the general industry pattern applies, since nationally 20% of all 1956 oilheating installations were replacements of obsolete oilheating jobs.

Oilburner Service

Oil men in Berkshire County handled 63% of all oilburner service this season; heating companies look after 18% and burner service companies get the other 19%. Oil men are progressively taking an increasing share of service work.

About 27% of the homes with oilheating have annual fixed-price service contracts. The typical price where parts are included is $23. Without parts, the contract charge is usually $15. Another 48% of oilheating users get each year a general overhaul or tune-up of their plants, paying $10.

On individual calls where no contract exists the oil men charge on the average a $4.15 minimum covering the first hour; non-oil companies rendering service average charging a minimum of $5.05. Service by oil companies is usually cheaper due to their long range interest in the account.

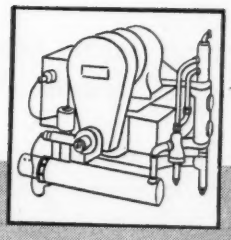
Advertising Promotion

Major oil companies naturally have done some advertising of fueloil and oilheating in Berkshire County, but three-fourths of the opinions say they did very little. The advertising that was done could be classified as emphasizing brand rather than the merits of oilheating in 70% of its coverage, according to the men asked.

A little more than a third of the local fueloil distributors are credited with doing a fair job of company advertising of oil heat. Among those men who could state figures, companies budgeted their advertising at around $3 an account or 1.3% of their gross billing.

Trucks per Company	*Number of Companies*	*Number of Trucks*	*Percent of Companies*	*Percent of Trucks*
6 to 9	1	6	3%	8%
3 to 5	9	29	25	38
1 or 2	26	41	72	54
	36	76	100%	100%

*Copyright 1956, Oilheating Market Reports, 424 Madison Ave., New York, N. Y.



COMMERCIAL & INDUSTRIAL oilburning

SECTION

fueloil & oil heat

NEW YORK

COMMERCIAL & INDUSTRIAL oilburning

Hot-oil Start-ups for No. 6 oil Jobs

Commercial-industrial burner Industry at large improves its job-design Ideas; many Men agree that rotary Burners need warm No. 6 Fueloil for cold Start-ups

by
Jean L. Dupuis

MANY MEN who concentrate on rotary-cup burners using No. 6 oil had comments and questions about my two-part article in the November and December 1956 issues of FUELOIL & OIL HEAT.

The comments and questions came from oilheating engineers employed by fueloil producers and retailers—from dealers who plan burner installations, and servicemen who take care of the installations—and from owners of apartment houses, hotels, greenhouses, and factories heated by rotary-cup burners installed to use No. 6 oil.

The response of many burner owners to the article was surprising, because few burner owners subscribe to FUELOIL & OIL HEAT. Questioned, the inquiring burner owners replied that their fueloil suppliers, burner dealers, and servicemen had given them the magazines containing the two-part article. This was done to prove they need additional equipment to end their oilburner troubles caused by the delivery of heavier and heavier No. 6 oil.

The article gave details of excessive suction-line vacuum, a trouble which today haunts many installations having pump-type rotary-cup burners.

Bad trouble, the article indicated, must be diagnosed and corrected when the suction-line vacuum of such a burner goes up to 18½" and keeps on rising, and when the return line is cold while the burner runs—although the suction line can get heat only from hot fueloil that goes out to a tank bell through the return line.

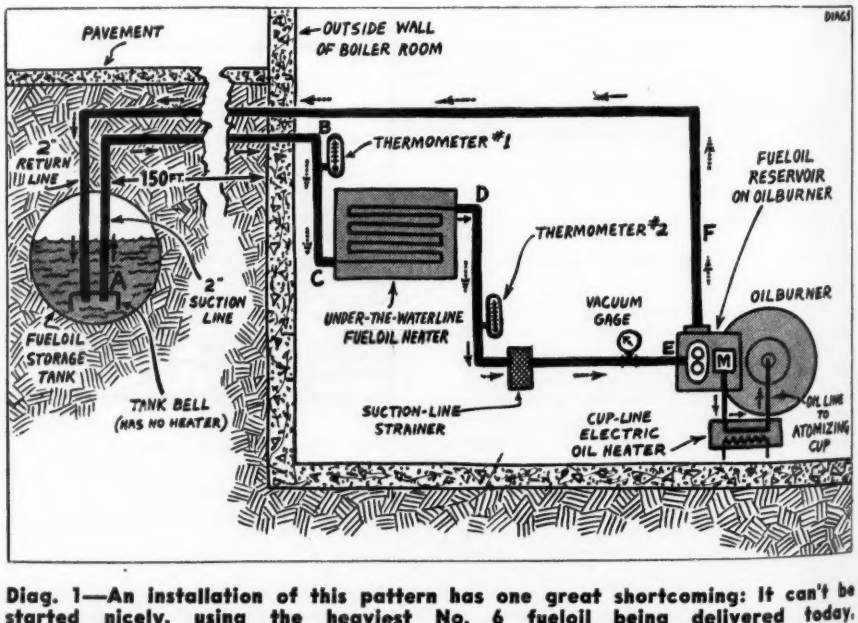
Development of suction-line vacuum appreciably higher than 15" causes the output of the oilburner pump to drop considerably. The result is that all of the fueloil brought to the burner by its pump is burned; hot fueloil then no longer returns to the tank bell (in the bottom of the fueloil storage tank) as it should. The suction line should be heated by the flow of hot, returned oil into it, in the tank bell. But the suction line no longer is heated that way; the flow of hot oil into the bell, from the return line, has stopped.

Hence the suction-line vacuum, which was too high to begin with, becomes higher and higher as the suction line becomes cooler and cooler. Finally the suction-line vacuum (at the burner end of the suction line of course) becomes too high for normal burner operation. The combustion-safety controls shut off the burner equipment because they detect abnormal performance of the burner and its flame.

That's a sketchy description of this suction-line high-vacuum trouble which now is being encountered on more and more installations as the heaviest grade of fueloil is becoming heavier and heavier.

(For complete details about this trouble, read the article in the November and December 1956 issues of FUELOIL & OIL HEAT. *Read the article, if up to now you haven't, also for a complete description of the performance of the equipment shown in the drawings which illustrate this article.)*

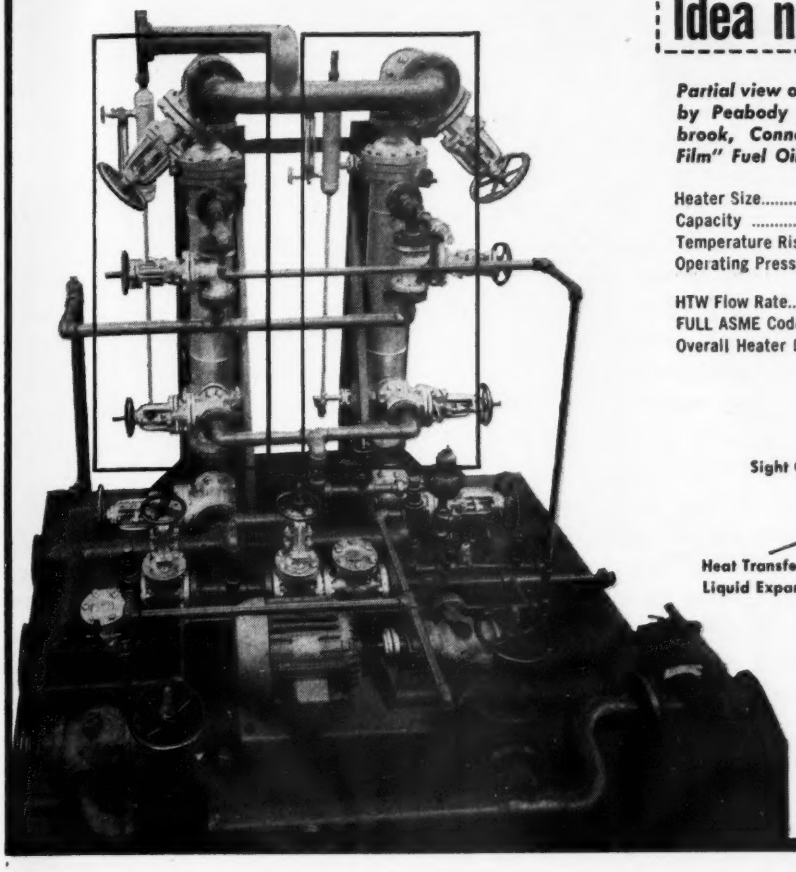
Briefly, the burner in Diag. 1 fires 35 gph, has a primary suction-line oil pump which handles 55 gph on a basis of zero suction-line vacuum, and therefore sends hot fueloil back to the tank (into the tank bell) at a maximum rate of 20 gph. Vacuum increase to 15" at the pump inlet reduces the burner-pump output to 49 gph, and the return-line flow to 14 gph. When



Diag. 1—An installation of this pattern has one great shortcoming: It can't be started nicely, using the heaviest No. 6 fueloil being delivered today, after a prolonged shutdown that permits the boiler and the suction line and return line to become stone cold. In many cities, most automatic rotary-cup burner installations using No. 6 oil have the same shortcoming. Although this was not covered in earlier articles on problems of heating No. 6 oil on burner jobs, thermometer #2 in this drawing is far down-stream from the under-the-waterline fueloil heater and from point "D" in the drawing. Locate such a thermometer at least three feet down-stream from an oil heater, to avoid getting a "false" high thermometer reading. Such a reading can be caused by the suction-line piping conducting heat from the oil heater to the thermometer.

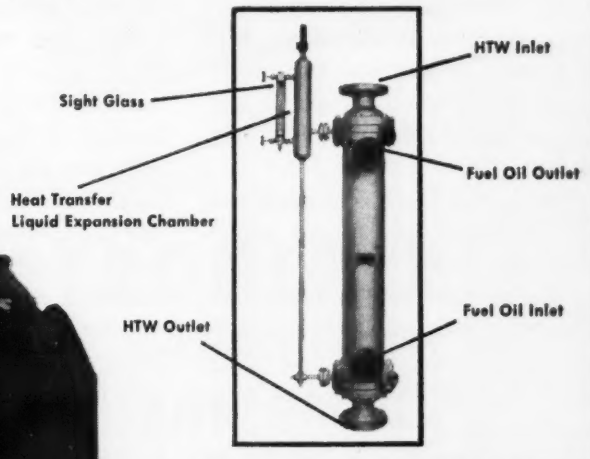
CUT ALONG DOTTED LINE AND SAVE

Idea no. 2 from Paracoil



Partial view of pump and heater set fabricated by Peabody Engineering Corporation, Glenbrook, Connecticut, utilizing two "Thermo-Film" Fuel Oil Heaters of these specifications:

Heater Size	FF-48 HTW "Thermo-Film"
Capacity	7500 lbs. No. 6 oil per hour
Temperature Rise	80°F to 210°F
Operating Pressures	300 psi, water side 315 psi, oil side
HTW Flow Rate	100 GPM at 370°F
FULL ASME Code Construction	
Overall Heater Dimensions	15" x 6'-6"



How to use High Temperature Water directly in a #6 oil heater...without danger of system contamination!

The Problem

The pre-heating of #6 fuel oil with High Temperature Water to provide adequate oil temperature and eliminate possibility of leakage of fuel oil into the HTW stream.

Leakage of fuel oil into the HTW stream would result in contamination of the system and could cause serious and costly damage to the boiler and the entire system.

The isolation of the fuel oil heaters can be accomplished by several methods. For example, the HTW stream may be passed through an evaporator to supply steam for use in a steam-type fuel oil heater. Or, the HTW stream may be passed through an intermediate water-to-water exchanger to heat a secondary water stream circulated through a water-type fuel oil heater.

In both of these systems, the HTW stream is safely isolated from the fuel oil heater by an intermediate secondary circuit. But effective as these methods are, they both require a minimum of two heat exchangers, additional space and additional connecting piping, regulators, level controls, etc.

A New Solution

Now for the first time the Paracoil "Thermo-Film" Fuel Oil Heater furnishes the optimum solution to the problem. **In a single exchanger** the "Thermo-Film" Heater provides adequate oil temperature, isolation of the HTW circuit from the oil circuit, a reduction in space requirements, simplicity of operation and substantially lower initial installation cost. A number of double tube elements are enclosed within the heater shell providing three circuits: the primary HTW circuit, an intermediate heat transfer fluid circuit, and the oil circuit.

The heat flow path is from the HTW to the heat transfer fluid to the fuel oil. In the rare event of an oil tube failure, the free oil cannot contaminate the HTW stream as it becomes trapped in the intermediate space containing the heat transfer liquid, and gives warning to the operating personnel by rising in the indicating gauge glass at the expansion chamber.

Your inquiries for Paracoil "Thermo-Film" applications to HTW systems are invited.

CUT ALONG DOTTED LINE AND SAVE

DAVIS ENGINEERING CORPORATION

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the suction-line vacuum at the pump rises to 20", the pumping rate drops to 40 gph, and the return-line rate drops to 5 gph. On most jobs, such a low return-line gph rate is ineffective. It can't keep warm the return line, then in turn the suction line.

The suction line of such an installation (see Diag. 1) must be kept warm, warmer than 110°F., during normal burner operation. It will become cold if it receives no heat from the return-line fueloil, for its only source of heat is hot, returned oil given to it in the tank bell.

If the suction line becomes cold and therefore its vacuum becomes appreciably higher than 15", the burner cannot continue running. That's true for many installations which have outside fueloil storage tanks and which use the heaviest No. 6 fueloil being delivered today.

The earlier article indicated that on an installation of this type the burner's pump should not develop vacuum higher than 15" when the burner is cycling normally—is starting and stopping in its usual fashion during cold weather.

On a cold day in January, an installation of the type shown in Diag. 1 developed a suction-line vacuum of 22" following the delivery of No. 6 fueloil more viscous than ever before delivered to the job. The 15-foot length of return line exposed in the boiler room should have been hot, about 160°F. But it became cool, 85°F., because no hot oil was being returned to the tank.

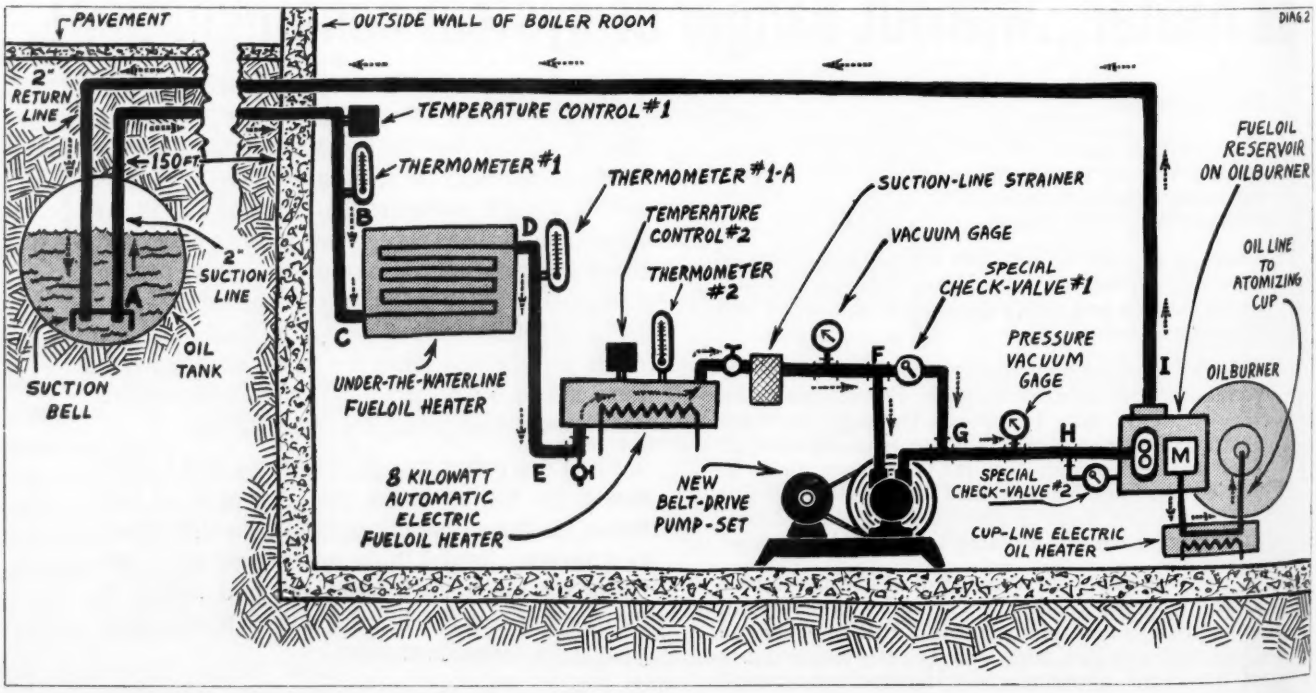
The high suction-line vacuum reduced the rate at which the burner's primary pump handled oil. Consequently the flow of oil through the return line stopped. In addition, the size of the flame in the boiler decreased to the degree that the boiler did not develop enough steam to heat all the radiation connected to it. All the oil coming in through the suction line was being burned; the oil was coming in at a rate too low to heat all the radiation.

We got the job out of trouble by running the burner steadily for one hour while it produced no flame. At the start of the hour the boiler was steaming. During the hour, all of the hot oil handled by the burner's pump was forced out to the tank, and the tank bell, through the return line. All of the hot oil pumped served to warm up the suction line, because no oil was being burned. At the end of the hour, the suction-line vacuum therefore was down to 10" and we could run the burner normally.

Six hours of usual burner on-off cycling, to heat the building in 20°F. weather, unfortunately then proved to us that our remedy was extremely temporary, for it wound up with the suction-line vacuum again excessive, up to 18½".

The remedies we applied to end the trouble are shown in Diag. 2. We did consider applying other remedies, the original article on this subject explained. Especially suitable for this job, we thought, was the idea of insulating the buried, outside suction line and return line with a three or four inch thickness of highly effective insulation, rock-wool or glass-wool, and applying electric heat to them in proper amounts when they needed it.

Conferences with the burner owner, however, led to the conclusion that



Diag. 2—Reader H. A. J. of Pontiac, Mich. found, when he used this arrangement (which he "evolved" before a drawing of this type appeared in FUELOIL & OIL HEAT), that the small piping through the burner hinge caused the pump-set to develop excessive pressure. The pressure-vacuum gage between "G" and "H" reported this. He says he ended the trouble by running a full-size line from a pipe-tee just right of "G" and left of the P-V gage—to "I," the return line close to the burner. He installed a check-valve and a globe valve in this line. With the equipment running, he opened the globe valve wide and read the pressure on the P-V gage. Then he closed the globe valve enough to increase this gage reading by one pound. For more details about this, read p. 100 of the June 1957 issue.

Patent Num. 2,722,372.
Other Patents Pending.

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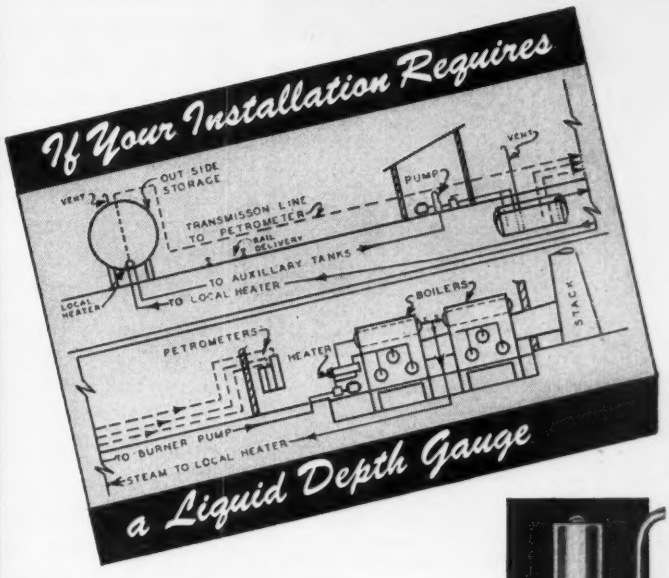

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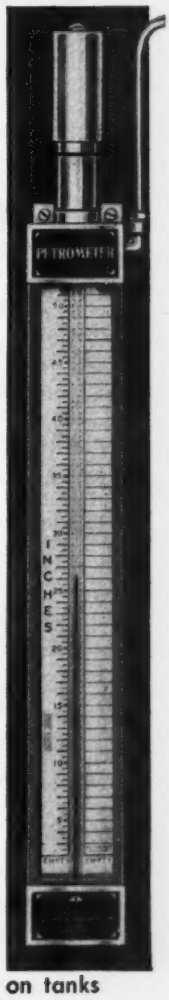

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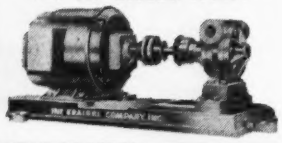

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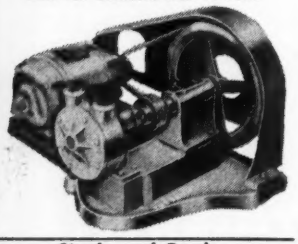

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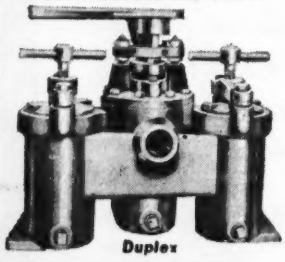

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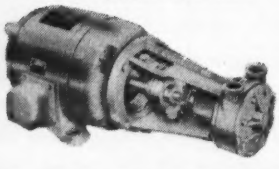

CLASS 80 TRI-ROL PUMPS

Interchangeable Service
Both light and heavy oils—tank truck and bulk station
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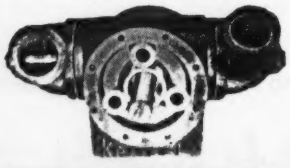

KRAISSL KRAISSL CO Inc
295 WILLIAMS AVE., HACKENSACK, N. J.

we could not even consider breaking up the concrete pavement over the 150-ft. length of outside suction and return lines.

Briefly, the pump-set in Diag. 2 can perform precisely as the oilburner pump performed when we ran the burner without producing a flame.

These advantages were gained by installing the pump-set:

First, its pump has a zero-vacuum capacity of 100 gph, almost twice the capacity of the oilburner's primary pump.

Second, with the burner not running, the pump-set can circulate hot fueloil speedily through the suction line and the return line.

Third, in addition to running when the oilburner motor runs, the pump-set will be turned on whenever temperature control #1 becomes as cool as 110°F. or 115°F.—therefore during normal operation the pump-set will not work against high suction-line vacuum, for when the burner is idle the pump-set will be started automatically before the suction line fueloil becomes cool enough to cause high-vacuum trouble.

Suction line Heaters

These advantages were gained by installing the new eight-kilowatt automatic fueloil heater in the suction line:

First, it provides easy oilburner start-ups when the boiler is stone-cold following boiler shutdowns for cleaning tubes, boiler repairs, etc.

Second, and important to the owner of this installation because of his past bad experiences, it provides easy burner start-ups following burner breakdowns nights or weekends. Using the equipment in Diag. 1, the oilburner often stopped "on safety" about midnight during coldest weather. The building became cold, interfering with the work being started in it on a cold morning. Worse, often it remained cold until noon, while a serviceman worked three or four hours trying to start up and maintain an oil flame in the firebox, which was exceedingly difficult because the suction line and return line had become stone cold and the No. 6 fueloil in them had become practically solid.

In Diag. 2, an oilburner breakdown on a cold night will be followed by

COMMERCIAL & INDUSTRIAL oilburning

starting of the pump-set by temperature control #1. The steam boiler will gradually become cold. The powerful eight-kilowatt electric fueloil heater in the suction line will provide the heat needed to keep the suction line and return line warm.

Two check-valves are labeled "special" in Diag. 2 because they are lightly spring-loaded and have O-ring seating that insures their closing dead-tight.

Check-valve #1 was installed to permit the oilburner pump to work as usual, as though the job has no pump-set, if ever the pump-set breaks down.

Check-valve #2 was installed because with the burner motor idle the pump-set should send hot fueloil into the burner's reservoir. The pump-set cannot, of course, push fueloil through the gears of the burner's primary pump when these gears are not running. Check-valve #2 must open also when both the burner motor and the pump-set are running, because the pump-set rated capacity is 100 gph output whereas the burner's primary pump rated capacity is only 55 gph.

For the oilburner to run while the pump-set is broken down or turned off, check-valve #2 should close dead-tight.

"Off-burner operation of the pump-set" is a phrase coined in discussing Diag. 2 with dealers in the field.

After the first article on this subject appeared, several dealers wrote saying what they liked best about Diag. 2 is the special check-valve #2.

One of these dealers said, "The idea of the check-valve at the side of the reservoir is a natural, for up to now I've used pump-sets to circulate fuel-oil around, not through, burners of several makes having reservoirs. Then though the pump-sets kept the oil lines warm when the burners were idle, the reservoirs cooled down. When the burners started, the pumps and metering systems in the reservoirs had to chew cold No. 6 fueloil for a few minutes. Cold fueloil also went to cup-

another Heat-Timer quality product . . .

LOW-COST HEAT ZONING

Trade Price
(incl. Thermostat)
$27.00

easy-to-install

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Now — the comfort of multiple-zone heating at a fraction of the former cost. ZONVALVE, new thermostatically-controlled motorized valve, replaces ordinary radiator valve *without plumbing change.* On new installations, ZONVALVES can be installed on radiators or branch lines.

Easily installed. Made in all standard pipe and tubing sizes. Low-voltage wiring permits placement of thermostat where most effective and convenient, with *low wiring cost.*

Opening of ZONVALVE automatically actuates burner or circulator.

ZONVALVE is designed for use on steam and hot water systems.

Ideal for private homes, factories, office buildings, hotels and motels.

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CORPORATION
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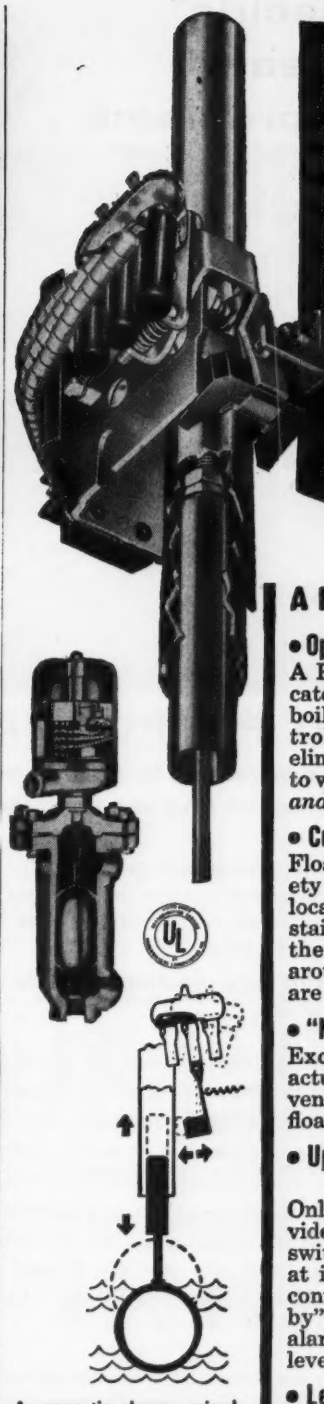
Please send me full details on ZONVALVE.

Name..... ☐ Jobber ☐ Contractor-dealer

Address.....

City.....Zone.....State.....



A magnetic sleeve, raised and lowered within a non-magnetic tube, "trips" or releases an Alnico permanent magnet attached to a mercury switch. Basically, this is Magnetrol.

WHY you are SAFER with MAGNETROL BOILER WATER LEVEL CONTROL

A Few of MANY Reasons:

• Operating Life Is Practically Unlimited
A PERMANENT Alnico magnet, located *outside* the float chamber, links boiler water level and electrical controls. This simpler magnetic link eliminates mechanical parts subject to wear and fatigue failure. *Pioneered and perfected by Magnetrol.*

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Floats can be fabricated from a variety of materials to meet any "special" local corrosion problems. Type 304 stainless steel floats have proven over the years to have the greatest all-around corrosion resistance, and so are furnished as standard.

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Exclusive self-cleaning brass liner actually "flexes" off corrosion—prevents scale growth and "sticking" of float.

• Up to Three Switches—an Exclusive Safety Feature
Only MAGNETROL design can provide up to three completely separate switch mechanisms, each operating at its own level, in a STANDARD control. Use extra switch for "stand-by" pump for emergency use; or alarm BEFORE fuel cut-off; or high level alarm; etc.

• Least Maintenance
Once-a-shift blow down and once-a-month visual inspection of switch housing are only regular maintenance. *Built SAFE, Magnetrols stay SAFE.*

We offer STANDARD Magnetrol Boiler Water Level Controls for service at temperatures up to 750°F., at pressures up to 600 psi., for single stage or multi-level stage service with up to three separate switching actions. Special units available for more extreme requirements.

MAGNETROL, Inc. Mail the Coupon Now for Full Facts

MAGNETROL, Inc., 2104 S. Marshall Blvd., Chicago 23, Ill. 9

Gentlemen: Please send me Catalog Section III and full information on Magnetrol Boiler Water Level Controls.

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Company_____

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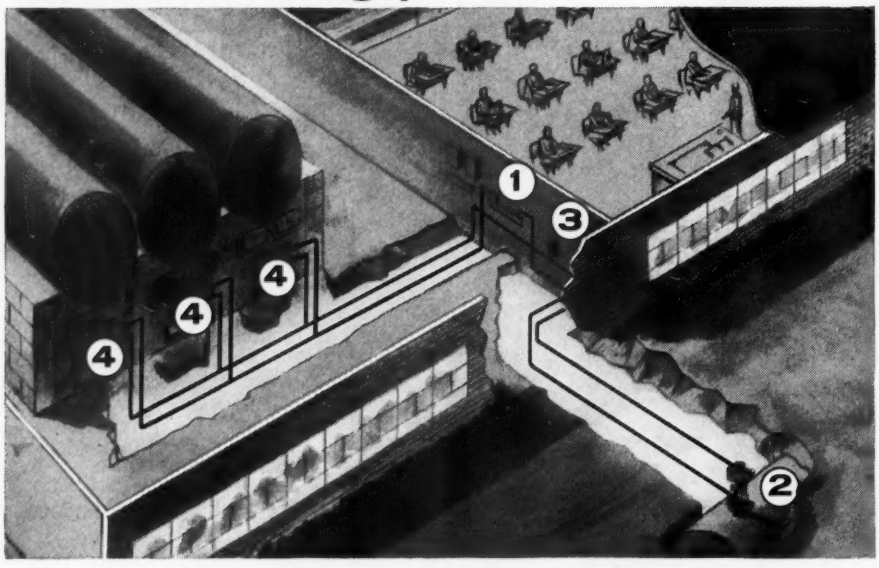
New Thermal Electric® System solves heavy fuel oil handling problems



GUARANTEED PERFORMANCE

Thermal Electric System is guaranteed by Fluid Systems, Inc.:

- *To remove No. 5 or No. 6 fuel oil from storage without auxiliary heat in storage.*
- *To deliver the fuel oil to the connection provided by the manufacturer of each burner or boiler-burner unit, at not less than 120 degrees Fahrenheit under all conditions of flow, non-flow, intermittency of flow or rate of flow.*
- *After extended shutdown of pipe heating, to raise pipe and contents to design temperature.*

Thermal Electric takes the guesswork out of pre-heating and handling heavy oil. Fuel viscosity becomes a known, reliable factor since temperature is strictly controlled and hydraulics are predictable. In this pre-engineered system, controlled increments of 60 cycle, low voltage alternating current convert the pipe carrying No. 5 or No. 6 oil into a continuous low density heating element which maintains correct temperature level . . . even during long shutdown periods. Power consumption? For the average two-burner installation, the same as three or four 100-watt bulbs.

1. During burner operation, the excess return oil from the burner is sent through the Thermal Electric Immersion Heater. 2. In the Thermal Electric Tank Unit the warm return oil (170°-200°F.) is mixed with cold oil from storage (50°-60°F.) to produce 120°F. suction line temperature. 3. The Thermal Electric Energizer, connected directly to the oil lines, provides controlled increments of low voltage 60 cycle alternating current which maintains the oil at 120°F. (300 SSF.) from the tank to the burners. 4. Even after prolonged shutdown, the oil at the burners is always at the correct temperature for a clean and safe automatic start-up.

More detailed information is contained in our new 20-page handbook. Also available is UL report MP 2047. Send for your free copy today.

FLUID SYSTEMS, INC.
1881 DIXWELL AVENUE
NEW HAVEN 14, CONNECTICUT

Gentlemen:
I'd like more information.

- ☐ 20-page handbook on Thermal Electric
- ☐ Underwriters' Laboratories Report MP 2047
- ☐ Have your representative call.

NAME.....TITLE.....
COMPANY.....
ADDRESS.....
CITY.....ZONE.....STATE.....

Fluid Systems INC.

Trademarks Reg. U.S. Pat. Off.

line electric heaters, and many of these had insufficient electrical capacity to heat the oil sufficiently for good atomization.

"Off-burner operation of the pump-set is improved greatly by using your idea of check-valve #2 in your drawing, so that with the burner idle running the pump-set rushes hot fueloil through the burner's reservoir."

In the March 1957 issue of FUEL-OIL & OIL HEAT, on p. 142, appeared an inquiry from a reader who wanted to know the make of the check-valves in Diag. 2. He was told they were made by Circle Seal Products Co., Inc., 2181 East Foothill Blvd., Pasadena 8, California. Many other readers asked the same question.

The original article on this subject of high-vacuum said the high viscosity of today's No. 6 fueloil makes it ridiculous to expect to start an oil-burner with the boiler cold and with No. 6 fueloil flowing to the burner at room temperatures as low as 60°F. to 75°F. Fueloil at 110°F. to 120°F. should flow to burners when steam boilers are cold, the article said. It went on to say such warm oil can be provided by electric heating arrangements amply sized, or by oilheating arrangements powered by small boilers fired by light fueloil or gas.

The preceding sentences drew the greatest applause from readers who studied the article.

Here's a typical comment on these sentences from an engineer who plans hundreds of residual-fueloil installations each year, and is in charge of the servicing of his company's installations:

"Many thanks for your use of the word 'ridiculous' in this connection! You've hit the nail on the head. When a serviceman is trying to start up a stone-cold installation, its pump-type oilburner or pump-set or both certainly should be given No. 6 oil heated to 110°F. or 120°F.

"True, this basic principle has been mentioned by certain equipment manufacturers, and acknowledged by certain segments of the burner industry. But because profits for certain of its advocates were involved, many men in the burner industry and many burner purchasers and owners did not ac-

cept the basic principle as gospel truth. They thought it might be sales talk.

"Your publishing the truth should have industry-wide effect. Pass on this idea to purchasers of new burners and burner owners, as well as to all commercial-industrial burner manufacturers, dealer organizations, and servicemen, and you will make a turning-point for the good of the fueloil and oilheating industry!

"Certainly during a start-up with the boiler stone-cold, give a burner only No. 6 fueloil that's been heated to at least 110°F. Or say at least 120°F., which I find better. An automatic rotary-cup burner using No. 6 oil must have a cup-line automatic electric fueloil heater according to UL. Receiving 120°F. or hotter fueloil from the second the burner motor starts, this cup-line heater will boost still higher (than 120°F.) the temperature of the oil flowing through it then going on the atomizing cup. From the second the cup-line shut-off valve opens, the atomizing cup will receive fueloil hot enough for easy atomization and ignition."

Several dealers who read the article liked the point that the suction-line vacuum during normal burner operation can be as high as 15", because a typical low-speed gear-type pump for No. 6 oil handles oil at the rate of 90% of its maximum or zero-vacuum pumping rate when developing the 15" vacuum.

"Starting up new jobs now," one dealer reports, "I expect 13" to 15" normal vacuum, not the 10" we designed for years ago. It's time we aimed differently than we did when No. 6 oil was more like No. 5 oil than it is today. I'm glad that somebody finally pegged the design vacuum at 15". This is long overdue."

Not one reader objected to the article's pegging the suction-line design vacuum at 15". Not one reader objected to the statement that during cold start-ups burner pumps and pump-sets should be given No. 6 oil heated to at least 110°F. or 120°F.

Letters from readers proved that dealers, installation planning engineers, and servicemen need more information about electric oil heaters.

COMMERCIAL & INDUSTRIAL oilburning

One puzzled dealer wrote, "Your article says I should aim to install heaters providing no more than 10 to 15 watts per square inch of electric heating surface. How can you reconcile that against this? The textbook that's been my guide for designing No. 6 oil jobs says the heat given No. 6 fueloil by an element immersed directly in the oil should not be transmitted to the fueloil at a rate exceeding 55 Btu per square inch of heating surface, otherwise the element surface will be hot enough for coke to form on it."

This dealer confuses watts per sq. in. with Btu per sq. in. Because one watt provides 3.4 Btu, density of 55 Btu per sq. in. equals 16 watts per sq. in.

Certain dealers need this instruction, not published before in FUELOIL & OIL HEAT: Don't give electric current to a heater not filled with oil!

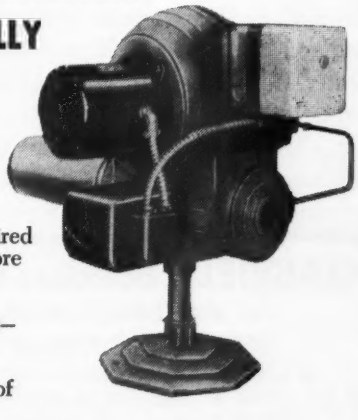
RADIANT

RADIANT UTILITIES CORPORATION
Manufacturers of PRECISION PRODUCTS for HOME · FARM INDUSTRY

Sets the pace

Automatic Oil Burners

ELECTRONICALLY CONTROLLED



- Electronic Combustion Safe Guard Controls
- 3 to 30 G.P.H. capacities
- Fully mounted & wired
- Less controls...more protection... greater flexibility
- Safe start—no puffs—no flare back—no unburned oil
- Successful record of installations

The speed and sensitivity of electronics makes possible immediate recycling along with fast and positive response. The Radiant Electronically Controlled oil burners are designed to meet the safety and protection required for industrial and commercial use.

Write for complete literature on all Radiant products.

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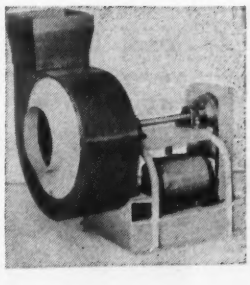
IF YOU DEAL IN Combustion Equipment

You Should SELL Draft Fans

BECAUSE the Induced Draft Fan:



- *Is Rapidly Superseding the Natural Draft Chimney*
- *Supplies the Final Link in the Chain of Automatic Firing*
- *Belongs in the Combustion Family*

WHITTY INDUCED DRAFT FANS

18 Sizes for every Commercial-Industrial Need

SEND FOR BULLETINS:

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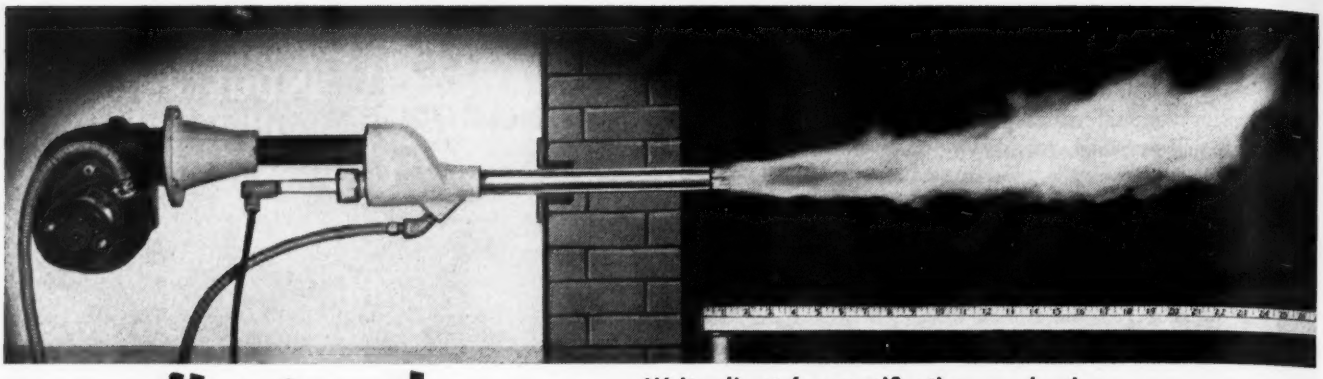
BUILDERS OF BOILER DRAFT EQUIPMENT SINCE 1929



scully torch

Write direct for specifications and price
SCULLY SIGNAL COMPANY
174 Green Street Melrose 76, Massachusetts

Dealers also need this: When no fueloil flows through an electric heater, don't have it heat oil to a temperature above the range of 130°F. to 145°F.—the precise maximum temperature depends on the design of the particular heater. Watt-density and possible fueloil movement or circulation within the particular heater are factors.

Provide a fused switch for each electric fueloil heater. Balance electric heater loads carefully in three-wire electric-supply systems.

Many dealers know the thumb rule already published in FUELOIL & OIL HEAT, which says each 1,000 watts of heater capacity can increase the temperature of six gallons of No. 6 oil by 100°F. in one hour.

One kilowatt is 1,000 watts.

But the readers request more information than that thumb rule. They bring up questions about the efficiency assumed, for example.

One gallon of No. 6 fueloil weighs eight pounds. The six gallons in the thumb rule weighs 48 lbs. To raise the temperature of 48 lbs. of water by 100°F. requires 4,800 Btu. But only half that much heat is needed to raise the temperature of No. 6 oil by the same amount, because the specific heat of this oil is .5 or one-half.

Thus 2,400 Btu are needed to raise the temperature of six gallons of fueloil by 100°F. Compare that 2,400 figure with 3,413, which is the Btu equivalent of one kilowatt-hour on a basis of the electric fueloil heater being 100% efficient.

You'll find that the thumb rule corresponds to an electric fueloil heater efficiency of about 70%. Heavily insulated, for example by the three or four inch thickness of rock-wool or glass-wool mentioned earlier, an oil heater of course can be more efficient than 70%.

Divide the 3,413 Btu's total heat in one kilowatt-hour by 240 (the hourly Btu equivalent of one square foot of steam radiation) and you get 14.2 as your quotient, indicating you can regard a 1,000-watt oil heater as having Btu input roughly equal to 15 sq. ft. of steam radiation. Eight kilowatts of electric heat, in the suction line in Diag. 2, thus packs the power of approximately 120 sq. ft. of steam radiation—input basis, of course.

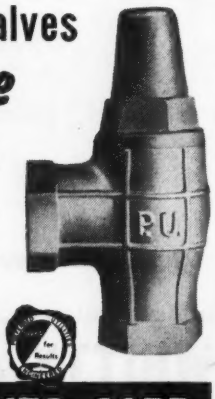
Because in round numbers one gallon of No. 6 fueloil weighs eight pounds and has a specific heat of .5, raising the temperature of one gallon of No. 6 oil by one degree Fahrenheit requires four Btu. That provides a good basis for solving problems related to heating heavy fueloil using electricity.

The preceding basis easily solves the problem, for example, of determining the size electric heater needed to raise the temperature of 100 gph of No. 6 fueloil by 50°F.—this could be the suction-line electric heater in Diag. 2.

Because four Btu's are needed to raise the temperature of one gallon of oil by one degree Fahrenheit, to raise the temperature of 100 gph by one degree F. takes 400 Btu per hour. To raise the temperature of this oil by 50°F. takes 50 times more heat or 20,000 Btu per hour (400 x 50 = 20,000).

The fueloil must get 20,000 Btu's per hour from the electric oil heater.

Preferred Anti-Syphon Valves
Meet Every Code



Non-Adjustable—Angle Type for convenient installation. Heavy Bronze Construction. Approved by Underwriters' Labs., Inc.

TYPE A—1¼" to 3". Maximum capacity to 1000 G.P.H., with #5 and #6 oil.

TYPE B—¾" and 1". Maximum capacity to 100 G.P.H., for #1 to #5 oil.

TYPE C—⅜" and ½". Maximum capacity to 30 G.P.H. of #1 to #3 oil.

Write for Bulletin 1619

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1860 BROADWAY Dept. OH NEW YORK 23, N. Y.

GABRIEL...*Builders of Fine Boilers*
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● SCOTCH MARINE ● TWO PASS FIREBOX ● VERTICAL TUBE ● TUBELESS ● HORIZONTAL RETURN TUBE.
15-225 lb. Pressures...for Oil, Coal, Hog Fuel and Gas Fuels

Write For Name of Nearest Distributor

GABRIEL BOILER CO.
1428 N.W. 14th AVENUE • PORTLAND 9, ORE.

COMMERCIAL & INDUSTRIAL oilburning

Each kilowatt-hour used in an electric heater puts into the heater 3,413 Btu's per hour. At 80% efficiency, each kilowatt-hour provides 2,730 available Btu's per hour, because 3,413 multiplied by 80% equals 2,730 Btu's per hour.

Divide the load, figured earlier as 20,000 Btu's per hour by 2,730 (available Btu's per hour from each kilowatt hour used at 80% efficiency) and you get 7.3 as your answer. You need 7.3 kilowatt hours in suction-line electric fueloil heater capacity.

As the efficiency may be lower than 80%, eight kilowatts of suction-line heater actually were provided for the installation shown in Diag. 2. Two four-kilowatt heaters were installed.

In connection with its articles on problems of heating residual fueloils for oilburners, we have received many letters from burner dealers using or interested in the Thermal Electric System made by Fluid Systems, Inc., New Haven 14, Conn.

Extensively used by many dealers for No. 5 oil installations as well as No. 6 oil installations, as its name indicates the Thermal Electric System uses electricity to heat fueloil.

Briefly, in a Thermal Electric System, an entire suction line and all the fueloil in it can be heated by sending high-amperage low-voltage electric current through the steel piping and fittings which form the suction line. The suction line can be heated electrically from the bottom of the suction-line stub in the fueloil storage tank, where fueloil first enters the line —right up to the suction-line connection of an oilburner or pump-set.

In addition, according to one pattern for using a Thermal Electric System, an immersion-type fueloil heater may be installed in the return line to increase the temperature of the fueloil flowing out to the storage tank—to the equivalent of a suction bell which feeds all hot, returned fueloil into the suction line. This equivalent consists of a small pipe within a large pipe. The small pipe is the electrically heated stub of the suction line. The hot, returned fueloil goes down to the bottom of the tank between the two pipes.

Undoubtedly highly effective after it is installed in accordance with plans drawn up by its manufacturer for each particular installation, the Thermal Electric System is guaranteed as follows by Fluid System, Inc.:

First, the system will permit the fueloil pump to obtain oil from the storage tank though the tank is not equipped with steam or hot-water coils to heat the oil in the tank.

Second, with the boiler cold and with the fueloil heated only by the Thermal Electric System, the fueloil pump will obtain oil at a temperature no lower than 120°F.—under all conditions of flow, intermittent flow, or rate of flow up to the design or maximum gph.

Third, after an extended shutdown of all of the installation's equipment

Play Safe with Weatherall

High-Pressure Atomizing

#5 Oilburner

- Ease of Installation
- Less Service
- More Profit
- Burns low-cost #5 Oil
- Complete Unit—Factory Assembled

U.L. Approved for #5 Oil.
N.Y. Standards of Appeals Acceptance.
NO special motors, nozzles, fuel units, or other highly individualized features.

WRITE US TODAY FOR COMPLETE INFORMATION

WEATHERALL ENGINEERS, INC.

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COMMERCIAL & INDUSTRIAL oilburning

including all fueloil-heating equipment, the Thermal Electric System will raise the temperature of the fueloil piping, and the oil in this piping, to design temperature that permits easy pumping of the fueloil.

The third point is interesting and important. It can mean, for example, that a heating plant using No. 6 fueloil has been turned off for three summer months. Everything in the plant has become stone cold, including the all-important suction line. For starting up, the Thermal Electric System is turned on beforehand for a suitable length of time. Then the oil pump of a burner or a pump-set is started. Thanks to the effectiveness of the electric fueloil-heating system, from the second it starts the pump will receive fueloil at a temperature no lower than 120°F.—if that is the design temperature.

All building owners who plan to buy burners that will use No. 6 oil, and all owners of such burners, now should be taught that during a cold start-up (boiler cold) the oil pump of an oilburner or a pump-set should obtain fueloil heated to at least 110°F. or 120°F.

You should make that point to all the burner buyers and owners you meet—if you sell No. 6 fueloil, plan and sell and install burner installations for No. 6 oil, or service commercial-industrial burners. That's the way out of the suction-line high-vacuum trouble encountered more and more today on thousands of No. 6 oil installations.

Big Burner Shipments still slow, says OHI

AUGUST SHIPMENTS of commercial-industrial oilburning equipment totalled 3,192 compared with 3,625 for the same month a year ago according to the Research Department, Oil-Heat Institute of America.

Eight month shipments are lagging 13% behind last year. So far this year 18,975 big burners have been shipped against 21,783 during the first eight months of 1956.

Shipments for the month of August by burner types and sizes are:

	Oil-burners	*Gas-Oil burners*
HORIZONTAL ROTARIES		
Over 2½ to 8	30	..
Over 8 to 30	566	33
Over 30 to 100	572	74
Over 100	31	8
TOTAL SHIPMENTS	1,199	115
GUN BURNERS		
Over 5 to 30	1,487	238
Over 30	51	33
TOTAL SHIPMENTS	1,538	271
MECH. ATOMIZING		
30 and over	53	16
TOTALS, ALL TYPES	2,790	402

J. U. Kaye and Company has been appointed manufacturers' representative for Cleaver-Brooks Co., Milwaukee, Wis. Headed by Joseph Kaye, former sales engineer with Dravo Corp., Pittsburgh, Kaye and Co. will cover western Pennsylvania, eastern Ohio, West Virginia and two counties in Maryland for Cleaver-Brooks.

SAFETY SWITCH
THAT SHUTS OFF FUEL IF BLOWER FAILS

Protection for Oil Burners • Industrial Ovens • Power Gas Burners

WHAT IT DOES

The Dewey Safety Air-Flow Switch protects against opening of fuel valve until fan is up to speed.

Insures purging of furnace before fuel valve opens. Closes fuel valve if fan slows up or stops. Flashes danger signal if fan or fuel stops. Safeguards against danger from gas fuel failure when used with safety shut-off valve.

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Dewey SAFETY AIRFLOW SWITCH

WEATHER-CHRON
NEW WEATHER RESET TIME SWITCH

OUTDOOR TEMPERATURE SELECTS COMFORT HEATING HOURS

Only the new Weather-Chron provides for independent comfort hour settings—separate for every day of the week!

WEATHER-CHRON EXCLUSIVES!

- Switching time to day-thermostat is automatically advanced with each degree drop in outdoor temperature.
- When outdoor temperature drops below the selected night dial setting, the day-thermostat controls heat flow at night as well as during the day.
- When outdoor temperature rises above the selected cut-off dial setting, all heat flow stops.

Available with 20 hours of spring carry-over

Each degree change in outdoor temperature automatically changes heating starts and stops.

Write for complete model information

AUTOMATIC DEVICES CO., INC.
714 Hillgrove Ave. • Western Springs, Ill.

Calendar of Coming Events

NOVEMBER

11–14—API 37th annual meeting, Conrad Hilton Hotel & Palmer House, Chicago, Ill.

11–14—API Marketing Division annual meeting, Congress Hotel, Chicago, Ill.

12—Oil Heat Association of Maryland, monthly meeting, Hotel Stafford, Baltimore, Md.

13–15—National Association of Oil Equipment Jobbers, Management Institute, Ohio State University, Columbus, O.

14–16—National Oil Jobbers Council (annual meeting), Congress Hotel, Chicago.

18—Air-Conditioning and Refrigeration Wholesalers annual meeting, Sheraton Hotel, Chicago, Ill.

18–21—Air-conditioning and Refrigeration Industry 10th Exposition, International Amphitheater, Chicago, Ill.

18–20—National Heating & Airconditioning Wholesalers, Inc., Annual Convention, Morrison Hotel, Chicago, Ill.

21-22—National Warm Air Heating and Air Conditioning Assn., annual convention and committee meetings, Hotel Morrison, Chicago, Ill.

DECEMBER

4– 7—National Association of Plumbing Contractors, Committee and Board Meetings, Shoreham Hotel, Washington, D. C.

10—Oil Heat Association of Maryland, monthly meeting, Hotel Stafford, Baltimore, Md.

JANUARY 1958

19–23—National Association of Home Builders, Convention-Exposition, Conrad Hilton and Sherman Hotels, Coliseum, Chicago

27–29—American Society of Heating and Air-Conditioning Engineers, annual meeting, Penn-Sheraton Hotel, Pittsburgh, Pa.

FEBRUARY

6– 7—Sheet Metal and Warm Air Heating Contractors' Association of Indiana, Inc., (40th annual convention), Hotel Severin, Indianapolis, Ind.

APRIL 1958

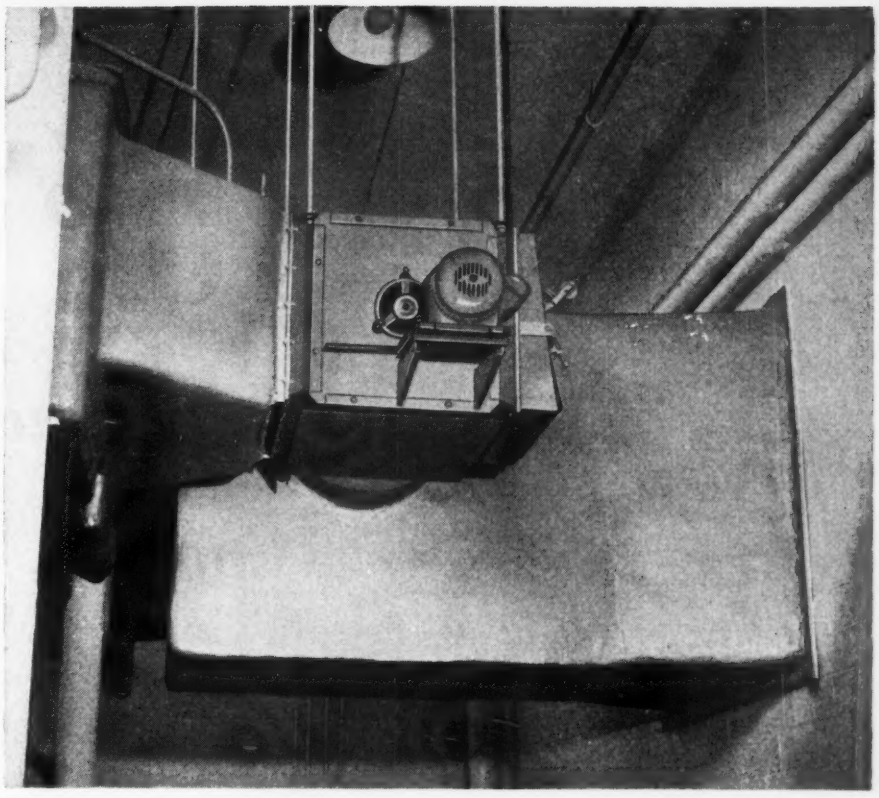
14–15—National Heating and Airconditioning Wholesalers, Inc., Spring meeting, Atlanta Biltmore Hotel, Atlanta, Ga.

15—Independent Oil Men's Association of New England, annual meeting, Statler Hotel, Boston, Mass.

JUNE 1958

9–12—22d National Oil Heat and Airconditioning Exposition, Coliseum, New York City.

9–12—Oil-Heat Institute of America, 35th annual convention, Park Sheraton Hotel, New York.



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That's just what you do the minute you install a Wing Draft Inducer.

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Then, you save money on fuel, because you get complete combustion with a Wing Draft Inducer.

And finally, you save money by uninterrupted boiler operation, freed from the uncertainties of natural draft.

If *you'd* like to save money, send for a copy of Wing Draft Inducer Bulletin No. I-57.

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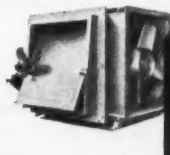
DIVISION OF AERO SUPPLY MFG. CO. INC.



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GREATER THAN ALL RELATED MAGAZINES

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FUELOIL & OIL HEAT	76.75%
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American Artisan	57.04
Domestic Engineering	62.56
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National Petroleum News	72.70

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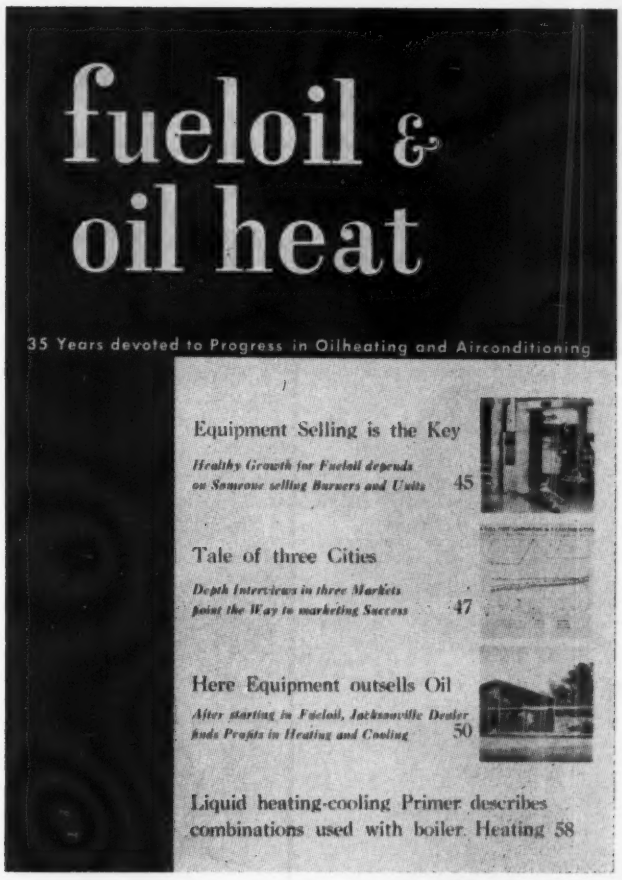
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35 Years devoted to Progress in Oilheating and Airconditioning
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Tale of three Cities
Depth Interviews in three Markets point the Way to marketing Success 47
Here Equipment outsells Oil
After starting in Fueloil, Jacksonville Dealer finds Profits in Heating and Cooling 50
Liquid heating-cooling Primer describes combinations used with boiler Heating 58

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Degree-day or calendar day delivery scheduling, when done the Burroughs Sensimatic way, ends calls like these. Keeps customers happy through a simple, *sure*, automatic delivery.

Customers get their fuel *before* they need it. Your trucks make maximum fuel delivery per stop. Daily routes can be planned for lowest cost. Expensive emergency calls virtually end.

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Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to the editor by the 5th.

OHI Distribution Division approves two new Chapters

TWO CHAPTERS, the Oil-Heat Institute of Indianapolis, Ind., and the Oil-Heat Institute of the York-Adams Area, Pa., have been approved for membership in the Distribution Division, Oil-Heat Institute of America, Inc., New York.

This brings total membership of the Division to approximately 3,285.

Francis J. Schuster, Troy Oil Co., is president of the Indianapolis chapter, and Frank W. Harper is executive secretary. Pending the election of officers, Bob Higinbotham, Aero Oil Co., New Oxford, and Harry Uhler, Crowlery Oil Co., York, are serving as secretary and president of the Pennsylvania chapter.

Oil Information Committee elects Phelps chairman

THOMAS W. PHELPS, assistant to the chairman of the board, Socony Mobil Oil Co., Inc., New York, was elected national chairman of the Oil Information Committee, public relations arm of the American Petroleum Institute, at its past quarterly meeting in Colorado Springs, Colo.

Phelps, who assumes the chairmanship at OIC's next meeting in New York, December 5-6, is succeeding M. S. Hauser, public relations director of The Ohio Oil Co., Findlay, Ohio.

Vice-chairmen elected at the Colorado Springs meeting were R. H. Collacott, public relations director, The Standard Oil Co. of Ohio; Russell D. Karns, assistant to the president, Pan American Petroleum Corp., Tulsa, Okla.; G. A. Mabry, manager of advertising and public relations, Humble Oil & Refining Co., Houston, Texas, and Stewart Schackne, public relations manager, Standard Oil Co. of New Jersey.

Donald R. Waugh of the OIC staff, New York, was elected secretary.

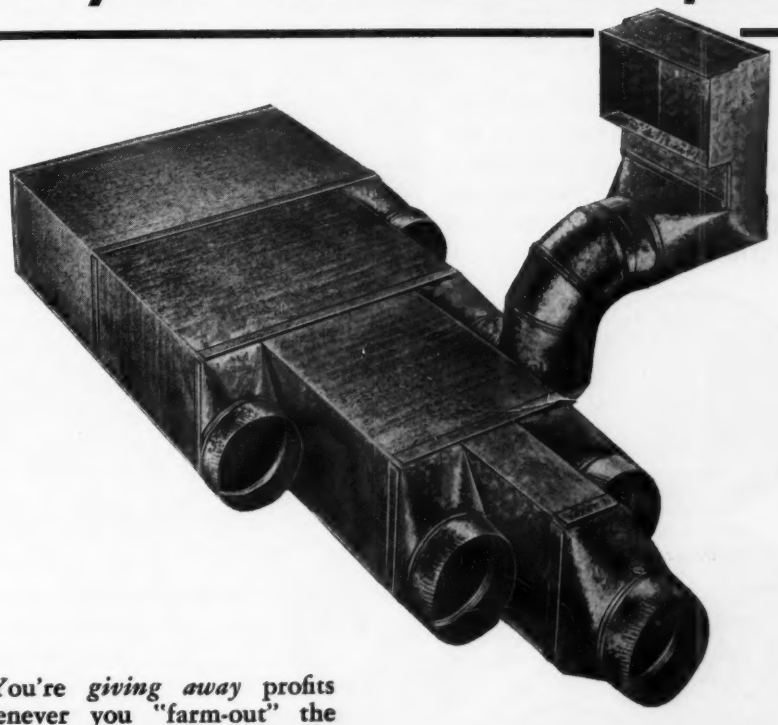
Heat Credit Association formed by Dealers in west Boston Area

SEVERAL retail oil companies in the Natick, Mass. area have formed the Heat Credit Association, Inc., to protect dealers against the bad debt buyer who skips from retailer to retailer. So far the organization has about 50 members in the several cities and towns a few miles west of Boston.

In order to achieve complete credit protection for its members, the HCA plans to limit its geographical area and carry on a constant membership drive within those limits. Low membership rates have been instituted, while a policy of dismissal of members who fail to regularly report delinquent accounts to the Association is aimed at helping the members help themselves.

The HCA has engaged the services

Keep ALL the Profits on your next warm-air job!



• You're *giving away* profits whenever you "farm-out" the ductwork on your furnace installations. You can easily handle the complete job yourself with "Snap-Rite" prefabricated ducts and fittings. You don't need a sheet-metal shop or special equipment—the patented quick-locking feature of "Snap-Rite" ducts and fittings makes them easy to assemble.

Shown above is our most popular and simplified No. 160 line which consists of a square main trunk with round branch lines. This is accomplished through the use of our standard stock trunk pipe with "pre-notch" feature and our No. 160 round branch takeoff as illustrated, effecting a reduction in size of main trunk at each branch. This method produces a neat air-tight installation, low in cost and easy to balance.

Write for our catalog now and keep ALL the profits on your NEXT job!

GRAY METAL PRODUCTS, INC.

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CUT YOUR PUMPING TIME BY 50% OR MORE WITH THE #100 UNIVERSAL TIME SAVING FILL!

Pat. No. 2690345

SAVE UP TO 42¢ on every delivery with this tested, proven device that allows you to pump up to 100 GPM with safety—eliminates spills, drips and gushbacks!

FITS ALL THREE—WITH ANY SIZE FILL PIPE. NO WRENCHES • NO NIPPLES • NO OTHER GADGETS • A SAFER, CLEANER, FASTER FILL EVERY TIME PROVEN BY OVER HALF A MILLION DELIVERIES.

CHECK THIS CHART

SEE HOW MUCH YOU CAN SAVE BY SPEEDING UP DELIVERIES

IF YOUR PUMPING RATE IS	THEN TO MAKE A 180 GALLON DELIVERY IT TAKES YOU	AND FOR PUMPING TIME EACH DELIVERY COSTS YOU*
30 GPM	6 Min.	60c
40 GPM	4½ Min.	45c
60 GPM	3 Min.	30c
80 GPM	2.25 Min.	22.5c
100 GPM	1.8 Min.	18c

*Based on average cost of $6.00 per hour for delivery equipment and labor.

Here is an amazing, yet tested and proven development that enables you to cut delivery *costs* by cutting delivery *time!* The #100 UNIVERSAL TIME SAVING FILL can actually save you as much as 42c *on every delivery* because it allows you to pump oil up to 100 GPM. You get a safer, cleaner, faster fill *and* there are no wrenches, nipples, attachments or any other gadgets. Here at last is the answer to simple and economical fuel oil delivery which can mean one, two or even three dollars of *extra profit* per year for every customer you serve. Don't wait—get all the facts now on what TIME SAVING FILLS can do for *your* operation!

FEATURES

- **Tapered, Machined Threads**
- **Minimizes Mistaken Deliveries**
- **Cadmium Plated to Last a Lifetime**
- **Self-Draining Fill— Helps Prevent Drips, Spills and Gushbacks**

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or a credit reporting agency to act as a nerve center for the group. All member firms report their accounts to whom no further credit should be granted. The names are sent to the agency which sorts and files them at no cost to the HCA, thus eliminating the expense of employed personnel. For a nominal charge of 25¢ any member firm may call the agency to check the file in regard to a particular individual, thus preventing a firm from taking on a future bad account.

Officers of the HCA are Joseph M. Kelly, president; Henry B. Pfeiffer, vice-president; Bruce S. Buckingham, secretary; John A. Hill, Jr., treasurer; C. William Newell, Robert H. Semple, and Thomas R. Varney, directors.

Western Cooling group meet, elect Officers, plan Show

MEMBERS of the Western Air Conditioning Industries Association, Los Angeles, recently elected William P. Tennity, president Tennity & Co., Tennico, Inc., Tenaire, Inc. and Crystal Tips, Inc., their president.

At the same meeting Arthur Hess was named vice-president. Officers re-elected were secretary-treasurer, Fred J. Tabery and board members: Peter H. Askew, W. W. Allison, Richard Farr, R. E. Harkins, George Hatch, E. L. Nelson, D. E. Reznick, Robert H. Savage, Henry C. Ulovec and Robert Warden.

One of the group's major programs is the Western Air Conditioning, Heating, Ventilating, and Refrigeration Conference and Exhibit, which will be held in the coming year on May 7-11 at the Shrine Exposition Hall in Los Angeles. At the recent meeting the members decided to hold the exhibit alternate years after 1958.

Members at MOHA Meeting addressed by Edward Pease

THE 27TH MEETING of Massachusetts Oil Heating Association, Inc., Boston, Mass., was held October 9 at the University Club, Back Bay.

Edward J. Pease, special representative, Sun Oil Co., addressed the meeting. Speaking on the importance of oil in American economy, Pease discussed developments in the Middle East situation, the impact on our economy of foreign crude imports, and U. S. reserves.

Oil Equipment Jobbers Assn. holds Meeting in Memphis

THE SEVENTH annual meeting of the National Association of Oil Equipment Jobbers, Tulsa, Okla., was held in October at the Peabody Hotel, Memphis, Tenn.

Among the many speakers addressing the group were Wendell B. Barnes, head of Small Business Administration, who explained how oil equipment jobbers and manufacturers can use SBA facilities; Victor Tabaka, whose subject was "Management—the Key to Successful Oil Marketing Equipment Operations"; and Clarence F. Reinhardt, Phillips Petroleum Co., who discussed equipment and its place in petroleum merchandising.

Included in the meeting was a trade exhibition in which forty manufacturers displayed equipment used in service stations, bulk plants, and similar oil marketing operations.

Fast venting **GORTON VALVES** make radiators heat quickly and evenly with ounces of vapor instead of pounds of pressure.

By installing correctly sized **GORTON VALVES,** air is quickly vented, permitting radiators to heat properly. Available in 5 sizes for proper venting and balancing of each radiator, and two sizes for venting mains. There is a **GORTON VALVE** that's just right for every radiator.

SEND TODAY FOR

Literature and free handy ruler giving actual sizes of air outlets of fast venting GORTON VALVES for every steam heating system.

GORTON HEATING CORPORATION Cranford, New Jersey

ASK YOUR WHOLESALER

ASHAE 64th annual Meeting to feature tropical Session

SYMPOSIUMS, a tropical session and outstanding papers of timely interest form the substance of the technical sessions planned for the 64th annual meeting of the American Society of Heating and Air-Conditioning Engineers, New York, N. Y., to be held January 27-29, 1958 in Pittsburgh. Officers will be installed, and the Past President's Award will be presented at this meeting.

Several sessions are being organized. Featured among them will be a Tropical Session on the Utilization of Solar Energy. Other technical sessions will be devoted to the reading of papers on such topics as the effect of cold ceilings on the feeling of comfort, study of comfort with heated floors, and determination of chimney draft.

Arrangements are being made for two symposiums. The first on high temperature hot water, under the organization of council member P. N. Vinther, will cover the categories of economic evaluations, marine application, military installation, design, civilian airport installations, and British and European methods. The second on school heating and airconditioning is being planned by council member W. G. Hole and will include such topics as design practice and an architect's look into the future.

Plans for the meeting are under the direction of the Pittsburgh Chapter Committee on Arrangements under the general chairmanship of T. F. Rockwell. Also aiding in the planning are D. W. Loucks, R. B. Stanger, and John Everetts, Jr.

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APPROVED STACK HEATER

- **NO TUBES!**
- **NO SOOT BUILD-UP!**
- **NO CLEANING PROBLEM!**

- Important Heat Savings
- Completely Factory Assembled and Wired
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Capacity: 12,000 to 22,800 BTU's

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Queens' Licensed Oil Burner Installers to hold Reunion

THE 18TH ANNUAL reunion dinner and dance of the Licensed Oil Burner Installers of Queens, Inc. will be held at the Valley Stream Park Inn, Valley Stream, L. I., on November 16. The group aims to provide an opportunity for manufacturer, supply house dealer and installer to meet or renew acquaintanceship in a congenial surrounding.

Marshall F. Allen named vice-president of AMCA

NEWLY APPOINTED executive vice president of Air Moving and Conditioning Association, Inc., Detroit, Mich., is Marshall F. Allen.

For the past few years he has been manager of Magnesia Insulation Manufacturers Assn.; prior to which he was with the National Aircraft Standards Committee, sponsored by the U. S. Aeronautics Chamber of Commerce.

Allen succeeds L. O. Monroe, who will retire.

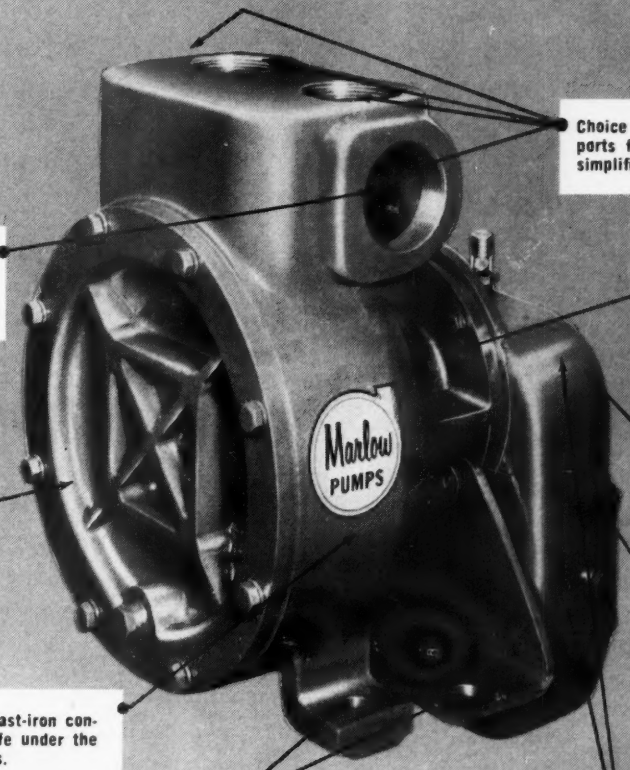
Hubbard will head Committee on sound, vibration Control

ARTHUR F. HUBBARD, Herman Nelson Division, American Air Filter Co., Louisville, Ky., has been named chairman of the Technical Advisory Committee on Sound and Vibration Control of the American Society of Heating and Air Conditioning Engineers.

One of the committee projects concerns sound management of air moving devices.

Greatest advance in *truck pumps...*

since Marlow introduced the gear-increaser, self-priming, cen- centrifugal truck pump to the Petroleum Industry in March, 1949.



Choice of 2 horizontal or 2 vertical 2" ports for both suction and discharge simplifies piping and installation.

No check valves in pump suction reduces moving parts and maintenance problems to a minimum.

Long-life, self-lubricating, self-adjusting "Remite" mechanical shaft seal eliminates leaks and dripping oil.

Removable cover plate provides easy access to pump casing for inspection without disturbing pipe connections.

Heavy-duty gear box with helical-cut gears running in a bath of oil reduces noise to a whisper.

Gear box may be changed in field from standard 6 o'clock position to either 3 o'clock or 9 o'clock to facilitate alignment with PTO shaft during installation.

Rugged close-grained, cast-iron construction means long life under the most difficult conditions.

Standard mounting fits 5½" to 6" saddle without the use of adaptors or "trick mounts."

Rugged ball bearing construction provides for long, trouble-free pumping life.

Only Marlow offers you all these features...PLUS—

1 *Low initial cost* for this type of pump.

2 *Capacity range from 20 to 75 G.P.M.* Pump has ability to handle deliveries just as fast as companion equipment will permit. Input speed is 500 to 700 R.P.M.

3 *No metal-to-metal contact* within the pump itself eliminates wear and makes possible peak operating efficiency throughout the *entire life* of the unit.

4 Patented diffuser-priming system permits the pump to reprime itself automatically.

5 Compact dimensions . . . length 14-5/16" . . . height 12⅞" . . . width 10½" . . . make mounting easy. Input shaft dimension 1⅛".

7-262

Marlow PUMPS

DIVISION OF

BELL & GOSSETT CO.

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Portland Dealers are Hosts at Maine regional Meeting

FIVE LOCAL oilheating associations in Southern Maine met in Portland on October 17 for a regional conference. The Portland Fuel Dealers Council was the host club.

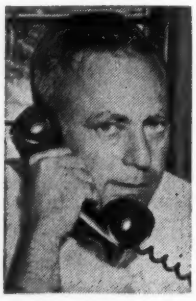
E. J. Pease, API, spoke on "The Importance of Oil in our American Economy"; Richard F. Quinby, Sun Oil Co., presented "Briefcase for Business"; and U. V. Davis, Esso, discussed retail credit.

The associations attending the meeting included the Tri-City Fuel Dealers, the Lewiston-Auburn, the Bath-Brunswick, and the Sanford groups.

The Maine Oil & Heating Equipment Dealers' Association is planning a similar conference for the northern part of the state, probably in February or March.

Greater Philadelphia Fuel Conference moves Offices

NEW OFFICES of the Greater Philadelphia Fuel Conference are in the Newton Building, 53rd and Baltimore Ave., Philadelphia, Pa. Previously located in the Commonwealth Building, the Conference in its new larger quarters will now be able to expand further their activities and services.



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Wrong numbers?
No, you've got
them OKay.
9th to 12th, next June, in
New York, at the Coliseum.
Biggest event of the year
for you. But right now,
let's sell a little harder in
November and December, and
finish up the year good,
but good!"

—G.M.M.

5-Week burner service Course conducted by Oregon OHI

A TECHNICAL COURSE on special and advanced burner service problems was given at the OHI Technical School, Portland, Ore.

The five week course included instruction in Williams Oil-O-Matic and General Electric lines; electronic controls; modulating and vaporizing burners. Time was also devoted to a discussion of commercial-industrial burner problems and customer relations.

John Wallis, OHI technical director, coordinated the course, while other industry specialists served as guest instructors.

Industry Problems discussed at Oregon OHI fall meeting

THE THIRD ANNUAL fall meeting of the Oil Heat Institute of Oregon, Portland, was held on September 27 and 28 at the Gearhart Hotel.

Several informed speakers presented their observations on some of the problems confronting the industry. Panel discussions followed on a variety of subjects.

Indiana Warm Air Association plans Convention in February

THE SHEET METAL and Warm Air Heating Contractors' Association of Indiana, Inc., Terre Haute, Ind., has announced that its 40th annual convention will be held at the Hotel Severin, Indianapolis, on February 6-7.

Refractories Institute elects J. E. Brinckerhoff President

J. E. BRINCKERHOFF, The Babcock & Wilcox Co., was elected president of The Refractories Institute at the recent annual meeting held at White Sulphur Springs, W. Va.

The Institute is a national trade association of refractories manufacturers in the United States, Canada and Mexico.

"I wish I'd done it 2 years ago . . .

MOTOROLA 2-WAY RADIO STARTED BOOSTING PROFITS THE DAY IT WAS INSTALLED"

"2 years ago I felt handcuffed, watching my competitors building up their business while we were left at the post . . . listening to customers complain and eventually drift away. I had heard of 2-way radio, but I was "on the fence" about it. Others were using it and actually taking my customers away from me with better service.

"So I decided to take the plunge—and that turned out to be the happiest business day of my life. Motorola 2-way radio cuts costs a dozen ways and gets more work from every truck. Single handed, it has taken our hit-and-miss operation and made it into a smooth-functioning, profit-making unit.

"With better service we're keeping our present customers and winning many of the old ones back. News gets around and we're putting new customers on our books every day. I was pretty late in discovering 2-way radio, but now it runs a close second to trucks as the most important tool in our organization. Before I invested, I learned that Motorola furnishes more 2-way radio than all others combined. The reasons become more obvious after using it for 2 years."

Write, phone or wire TODAY

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2-WAY RADIO

MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.
A SUBSIDIARY OF MOTOROLA, INC.
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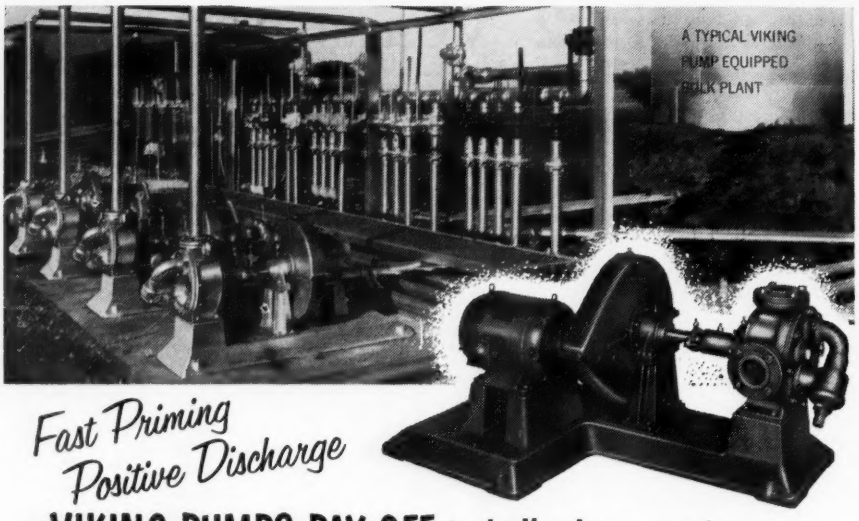
Motorola consistently supplies more mobile and portable radio than all others combined.
Proof of acceptance, experience and quality.
The only COMPLETE radio communications service—specialized engineering...product...customer service...parts...installation...maintenance...finance...lease.
"The best costs you less—specify Motorola."



Fast Priming
Positive Discharge

VIKING PUMPS PAY OFF in bulk plant service

Specify Viking pumps when you must be sure of self-priming performance . . . when you must have a positive suction lift . . . when you want safe pumping (equipped with Underwriters marker at slight additional cost).

Capacities available up to 1050 GPM, and all are built with the original Viking "Gear-within-a-gear" pumping principle.

Viking pumps that have been in service for years, pumping millions of gallons of all types of petroleum products, are testimonials to these new, modern Viking rotary pumps. Send today for catalogs Bee and Cee.

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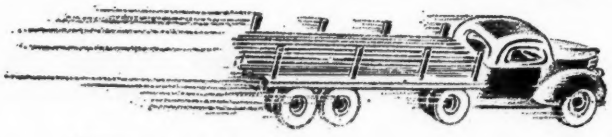
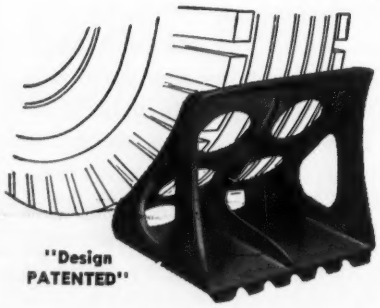
VIKING PUMP COMPANY
Cedar Falls, Iowa, U.S.A. In Canada, it's "*ROTO-KING*" pumps
Offices and Distributors in Principal Cities ● See Your Classified Telephone Directory

Beware of Run-aways!





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IF YOUR PARKING BRAKES FAIL

on a tricky grade or at a loading platform, you will wish you had been using a set of Standard

Wheel Blocks WB2H

These Casteel ***Safety*** Wheel Blocks meet all chocking requirements for guarding against slips and hazards in parking, loading, towing and emergency stops on steep grades.

They are standard equipment used by many transportation companies and fleet owners of trucks and trailers.

Made of high-strength Casteel with ribbed supports and rounded corners. Cast in one-piece and provided with deep gripper teeth to hold securely on any surface . . . ice, snow or concrete.

Write for Bulletin No. O-57

CALUMET STEEL CASTINGS CORP.
1636 SUMMER STREET HAMMOND INDIANA

U. of Illinois publishes perimeter heating Report

A FULL REPORT on the results of research investigation of "small-pipe" warm air perimeter heating systems has been published as "Bulletin No. 445 — Performance of Small-Pipe Warm-Air Perimeter Heating System" by the University of Illinois.

This report covers the small-pipe perimeter heating investigations from 1951 through 1954 carried on at the university under the sponsorship of National Warm Air Heating and Air Conditioning Association.

Besides discussing the performance of warm air perimeter heating systems with and without the addition of heat to the basement, the report contains a comparison of perimeter and high side wall convection systems.

Bulletin No. 445 may be obtained from the University Engineering Experiment Station.

Heating and Air-Conditioning Engineers nominate E. R. Queer

ELMER R. QUEER, director and professor of engineering research, Pennsylvania State University, has been nominated for the presidency of the American Society of Heating and Air-Conditioning Engineers, New York.

The report of the nominating committee which was released by Peter B. Gordon, Society president, also included: for vice-president, Arthur J. Hess, Hess-Greiner & Pollard, Los Angeles; for second vice-president, Walter A. Grant, Carrier Corp., Syracuse, N. Y.; and for treasurer, John H. Fox, Honeywell Controls, Ltd., Toronto, Canada.

Ray Nathan speaks at Meeting of Union County Association

"INCREASING fueloil Sales in the Face of gas Competition," was Ray Nathan's topic at the October meeting of the Union County Oil-Heat Association, Mountainside, N. J. Nathan is a fueloil and equipment dealer from Freeport, N. Y.

The New Jersey Association has made available two pamphlets for its membership. One is called "Keeping your House clean," and the other describes the weather program that the Jersey Associations are co-sponsoring.

You Ever Installed!

New Westinghouse totally enclosed oil burner motor— 2 lbs. lighter, 1 inch shorter than old-style designs

Here's the motor news you've been waiting for!

Westinghouse has a new totally enclosed 56-frame oil burner motor that's a full inch shorter and over two pounds lighter than the previous design*—a combination that's guaranteed to make your installations easier and less time-consuming.

You'll appreciate the many trouble-free features that are built into this new Westinghouse motor, too. For example:

It's totally enclosed for protection against dirt and moisture;

A manual reset thermoguard protects against abnormal operating conditions which could harm the motor;

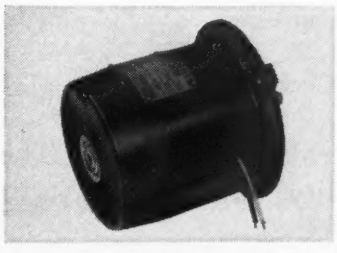
All mounting dimensions are in accordance with NEMA standards, simplifying installation and service;

Extra-large oil reservoir assures continuous lubrication with minimum reoiling;

"1,000,000 start" centrifugal switch is rugged, reliable, quiet—gives years of trouble-free service.

Take advantage of the best deal yet in oil burner motors—make sure that your next heating equipment order specifies *WESTINGHOUSE OIL BURNER MOTORS.* J-03043

***Only 13 lbs. light—5½ inches long from front end of motor to bracket fit.**



48-FRAME OIL BURNER MOTORS are also available from the complete Westinghouse line of heating equipment motors. Whichever you choose, you're assured of the trouble-free features described above.

YOU CAN BE SURE...IF IT'S Westinghouse

SMALL MOTOR DIVISION, LIMA, OHIO

Rugged

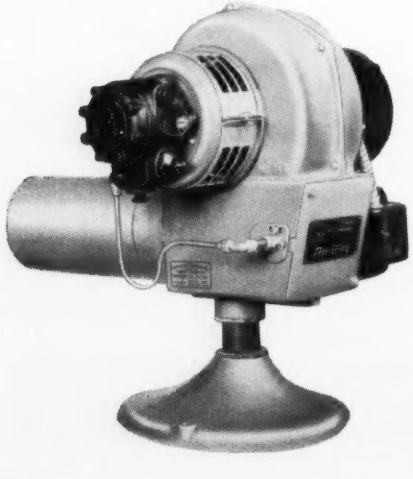
like *Nu-Way* oil burners

You can depend on any Nu-Way oil burner to carry the ball for you for a long, long time.

Housings are sand-cast aluminum alloy . . . hold motor and pump in close alignment . . . resist any tendency to warp or twist with heat or age.

Ignition conductors are solid brass — won't sag, won't deteriorate. And transformers used are extra heavy, too.

As proof of Nu-Way's ruggedness and durability, we find our customers wear well, too. Be one. Write Nu-Way Corporation, Dept. FO-117, Rock Island, Illinois.

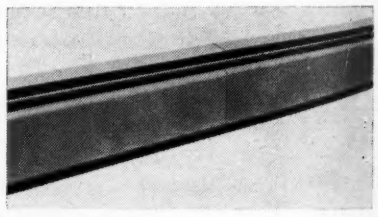


New Products

Each New Products item has an identifying number. If you want more information on any equipment described here send the coupon on page 123 to FUELOIL & OIL HEAT, *2 West 45 St., New York 36, N. Y., and identify the product by circling its number on the coupon.*

Continental's hot water Baseboard will have national Distribution

THE NEW BEAUTYBASE, Model H-20, is Continental's hot water baseboard heating line now ready for national distribution. Rectangular aluminum fins allow the ¾" copper tube to expand and contract noiselessly. Installation features include: brackets that can be located wherever desired by snapping into place, "snap-on" accessories and telescoping splice pieces. The multiple length series allows any wall from 36" upwards to be covered without cutting enclosure in the field and while stocking only three sizes.

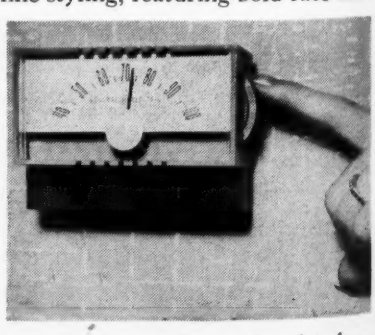


Made by: Continental Manufacturing Co., P. O. Box 4048, Baltimore 22, Md.

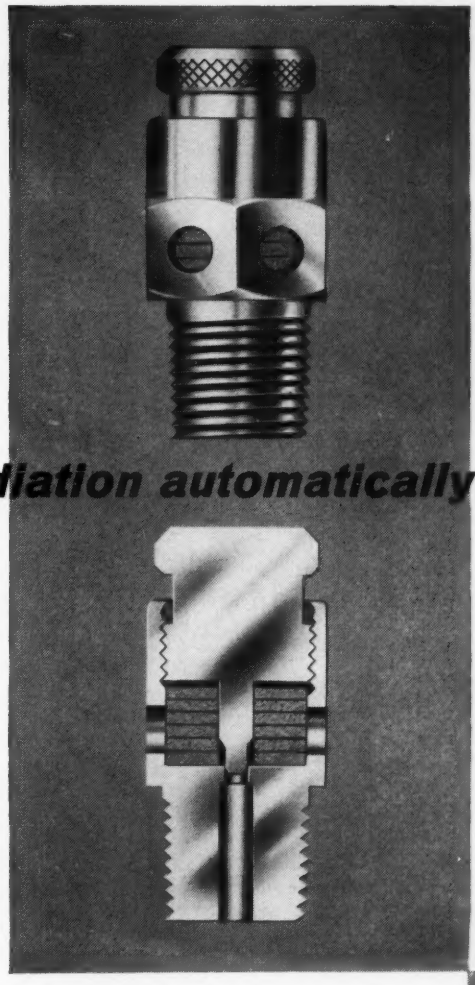
Circle E1 on coupon, page 123

New General Electric room Thermostat has Visibility, straight-line Styling

GENERAL ELECTRIC has introduced a room thermostat with contemporary straight-line styling, featuring bold-face temperature readings visible from across the room. A companion attachment, also introduced, controls the cooling, heating and fan units in home airconditioning systems. The small functional base attachment fits under the thermostat and has one switch to turn the heating or cooling



NEW
LOW-COST TACO-VENT
#402 Automatic Hot Water Air Valve



for venting hot water radiation automatically all the time

Taco Air Valves have consistently led the industry in quality and performance.

Now a new Taco-Vent, the 402, is available as the low-cost companion to the 400-401 series, the world's most popular automatic air valve, field proven on millions of installations.

no. 402 features

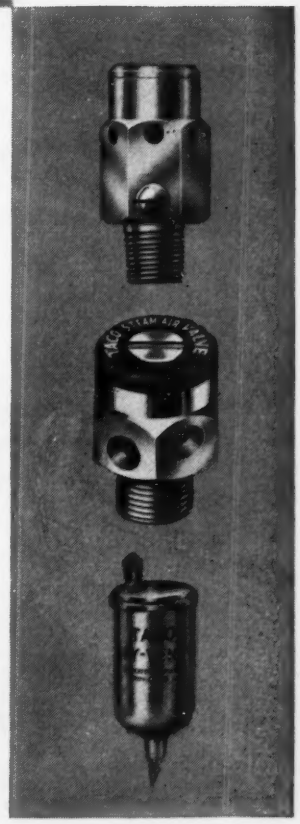
No other air valve has this exclusive combination of features.

- Water flow is controlled by close fit of extended pin in bottom port.
- Positive shut-off.
- Bottom port may be cleaned by rotating vent screw.
- Fiber space can be varied by adjusting vent screw.
- Knurled vent screw adjustable by hand—non-removable.
- Brass nickel plated.

NOS. 400-⅛" and 401-¼"
are the original automatic Air Valves with the safety plug.

NO. 410-⅛"
Taco Automatic Steam Air Valve is designed to remove air from steam convectors, radiators and mains without pinging, clicking or hissing.

NOS. 423 (30 PSI) and 424 (75 PSI)
Taco Hy-Vents (float type) are designed for large venting capacity, particularly suited for high points, radiant panels and down feed systems.



TACO HEATERS INCORPORATED

BETTER HEATING Taco BETTER WITH TACO

1160 CRANSTON STREET
CRANSTON 9, RHODE ISLAND

Corporate Office: 342 Madison Avenue, New York 17, New York
In Canada: Taco Heaters of Canada, Ltd., 4 Gilead Place, Toronto 2

CIRCULATOR • 170 PUMP • MP PUMP • FLOCHEK • AIR-SCOOP • TACO VENTURI • TEMPERING VALVE • HEAT EXCHANGER

Stop Oil Leaks!

WITHOUT DOWNTIME and with unit in service

A Sealant in Handy Stick Form

Users' Reports Tell How OYLTITE-Stik can help you

". . . to make instant repairs on basement storage tanks . . . a great time saver."

A New York Oil Distributor

". . . on seams of large oil tanks where weld was not perfect."

A Wisconsin Fuel Company

". . . we punched a hole in the tank with an ice pick, then filled the tank and plugged the hole with the oil running out; it has held for months."

A Maryland Contractor

". . . to seal small holes of oil storage tanks, created through condensation."

An Illinois Contractor

". . . has done such a good job we do not want a service man to be without one."

A Pennsylvania Heating Company

". . . . to repair leaks in domestic tanks inaccessible for repair by other methods . . . most satisfactory."

A Canadian Contractor

OYLTITE-Stik is a Cost-saver and trouble-stopper for service men.

• **See your suppliers for OYLTITE-Stik or write direct on company letterhead for free sample.**

LAKE CHEMICAL CO.
LA-CO BRAND
3086 W. Carroll Ave., Chicago 12, Ill.

on or off, another with an on and automatic position for the fan.

The complete unit—heating thermostat and airconditioning base—forms a single heating-cooling control, measures less than 2" thick, 3" high and slightly more than 4" wide.

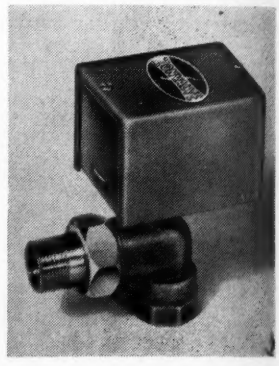
The new thermostat operates with all standard control systems and with G-E's outdoor control system, which compensates automatically for changes in outdoor weather conditions.

Made by: General Electric Co., Appliance Control Dept., Morrison, Ill.

Circle E2 on coupon, page 123

Zonvalve by Heat Timer includes Valve, Thermostat, Transformer

ZONVALVE is a thermostatically-controlled radiator valve to provide multiple zone heating at low cost. Made in all standard sizes, Zonvalve replaces the ordinary radiator valve. It is powered by an electrical motor and uses low voltage wire.



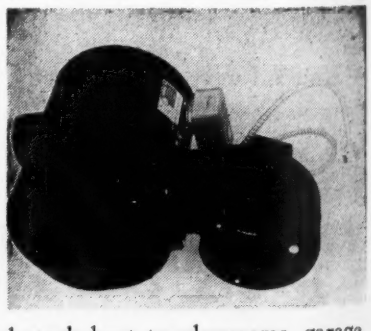
In the "open" position Zonvalve automatically turns on the burner or circulator. It is designed for either steam or hot water systems and is available as a complete package—valve-thermostat-transformer.

Made by: Heat-Timer Corp., Dept. 274, 657 Broadway, New York 12, N. Y.

Circle E3 on coupon, page 123

Safety stack Heater, UL approved, reclaims and circulates waste Heat

MODEL A HEAT RECLAIMER made by Safety Stack Heater, Inc. and available in 6, 7, 8, and 9 inch sizes, has been listed by Underwriters' Laboratories and is approved by the National Board of Fire Underwriters. The device is equipped with its own operating control and circulates reclaimed stack heat to playrooms, garage, basement or similar areas.



Underwriters' Laboratories report on the stack heaters indicates they are suitable for installation in the flue pipe of oilfired heating equipment since the design does not restrict the passages and does not reduce flue gas temperatures to the point where condensation forms.

Made by: Safety Stack Heater, Inc., 44 Westminster Road, Baldwin, N. Y.

Circle E4 on coupon, page 123

there's a WALKER draft control product for every heating purpose . . .

WALKER FUEL-SAVER AUTOMATIC DRAFT REGULATOR

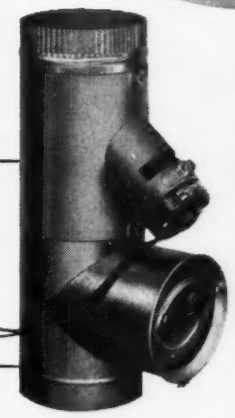
- draft regulators for oil
- draft regulators for coal
- draft controls for gas
- draft inducers
- draft chimney caps
- gravity roof ventilators

WALKER MANUFACTURING & SALES CORPORATION
1750 Penn St., St. Joseph, Mo.

CANADIAN DISTRIBUTORS
G. Mitchell & Co., 4215 Gascon St., Montreal, Quebec, Canada
E. H. Price, Ltd., McArthur St., Winnipeg, Manitoba, Canada
E. H. Price, Ltd., 83 Robson St., Vancouver, B.C., Canada

A

WALKER



Shur-Flo DRAFT INDUCER

***Saves* YOU MONEY! *Saves* TIME!**
COMBINES TWO DRAFT JOBS IN ONE!

Eliminates need for two installations by combining fan operated draft inducer with draft regulator control. Simple to install at any angle.

FAMOUS DRAFT CONTROLS BY WALKER
PRECISION ENGINEERED FOR QUALITY

TYPE Z

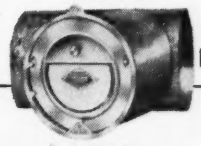
Dial & Pointer adjustment — simplest design, easiest to adjust, maintains positive and accurate control under widest variation of stack draft.

TYPE 34 B

Universally accepted for space heaters, water heaters, trailer stoves, and all budget-priced heating equipment.

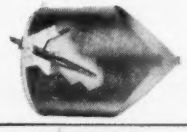
TYPE BB

Extra rugged, heavy construction designed for commercial and industrial use. Actual installation proved it cut fuel costs in only three months, enough to more than pay total original investment cost.



ROYAL PURPLE MODEL

Walker's finest quality automatic draft regulator with all moving parts completely shielded from corrosion. Guaranteed performance.



WALKER BBG DOUBLE SWING CONTROL

Walker's BBG Double Swing Control regulates updraft, dissipates downdraft in gas-fired and combination oil-gas fired equipment.

VENTURI TOP FOR CHIMNEY CAPS

Unique Venturi design assures positive elimination of downdraft at chimney top . . . for oil, gas or coal fired chimney vents. Patented pivots, balanced construction, guarantee maintenance-free long life.

Please rush me information about the Walker items checked below.

- ☐ Automatic Draft regulators for small installations.
- ☐ Industrial Draft regulators for schools, buildings, plants.
- ☐ Double Swing Draft Control for Gas.
- ☐ Walker SHUR-FLO Draft Inducer.
- ☐ Royal Purple—Deluxe Controls for Deluxe Equipment.
- ☐ Venturi Top Chimney Top.

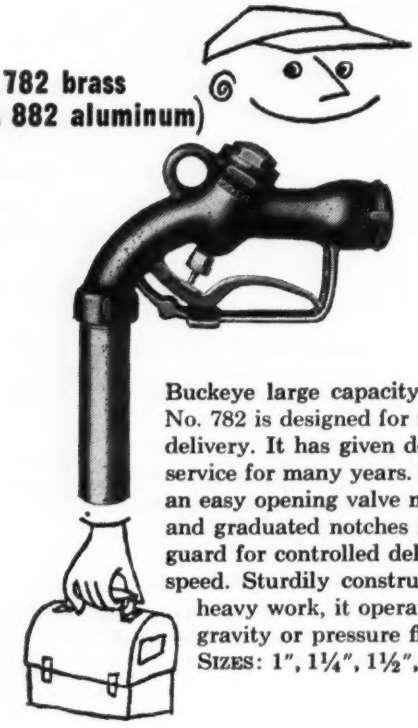
NAME_____ ADDRESS_____

CITY_____ STATE_____

two workman-like Fuel Oil Delivery Nozzles

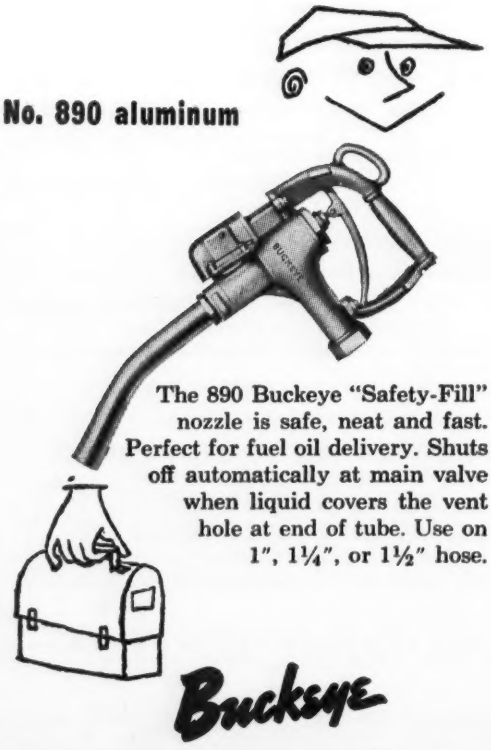
Which one do You need?

No. 782 brass
(No. 882 aluminum)



Buckeye large capacity nozzle No. 782 is designed for fuel oil delivery. It has given dependable service for many years. No. 782 has an easy opening valve mechanism, and graduated notches in rear guard for controlled delivery speed. Sturdily constructed for heavy work, it operates on gravity or pressure flow. SIZES: 1", 1¼", 1½", 2".

No. 890 aluminum



The 890 Buckeye "Safety-Fill" nozzle is safe, neat and fast. Perfect for fuel oil delivery. Shuts off automatically at main valve when liquid covers the vent hole at end of tube. Use on 1", 1¼", or 1½" hose.

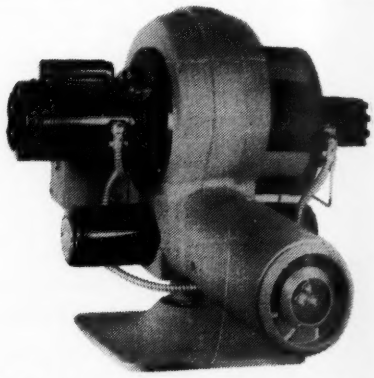
Buckeye

through your oil equipment distributor, or write

BUCKEYE IRON & BRASS WORKS, Dayton, Ohio

Korth adds Shell Head Oilburner with capacity Range 8 to 20 gph

AN ADDITION to Korth's line is another Shell Head oilburner, Model T-4SH-16, rated 8 to 20 gph. This is the fifth size to be introduced in the series, now available in models from .75 to 20 gph.



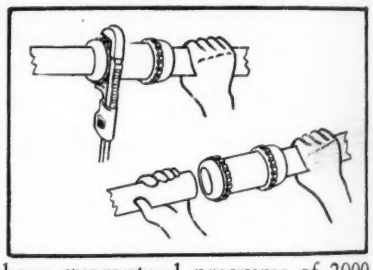
The latest model features a Shell - designed combustion head with twin ignition, two transformers and three nozzles, plus factory-mounted delayed oil valve and a Honeywell electronic safety control system.

Made by: Eckhart Mfg. Co., Inc., Union, N. J.

Circle E5 on coupon, page 123

"Quik-Joint" Series for steel Pipe manufactured by Guardian Products

JOINING STEEL PIPE is the function of "Quik-Joint" made by Guardian. The device can withstand severe shock without cracking; it can fit into smaller openings because of round end-nut construction; and allows maximum of 7 degrees of angular deflection. The joints have guaranteed pressures of 2000 psi.



Made by: Guardian Products Corp., Michigan City, Ind.

Circle E6 on coupon, page 123

Vent-Rite Valve for Radiators is made by Anderson Products

ANDERSON PRODUCTS, INC., has designed a venting valve for free standing radiators in non-vacuum steam systems. Called the No. 7 Vent-Rite valve, it is available in four models, each with a different size vent to provide for almost every venting requirement. The vents are chrome finished and have a ⅛" male side connection.

Made by: Anderson Products, Inc., Cambridge, Mass.

Circle E7 on coupon, page 123

The Sign of bigger dealer profits

. . . *greater customer satisfaction*

"Certified Comfort" is a plan designed to help Shell Dealers build bigger sales and greater customer satisfaction. At the same time, it enables the dealer to assure the homeowner a quality fuel and expert oil heating service for the entire season.

With the "Certified Comfort" Plan, the Shell Fuel Oil Dealer certifies top quality heating oil and assures his customers of premium service, including degree-day system deliveries, anti-corrosion treatment of fuel tanks and metered delivery receipts.

To thoroughly acquaint fuel oil consumers with the "Certified Comfort" theme, Shell has prepared a complete advertising program, which includes television, radio, outdoor, newspaper and direct mail—all available to the Shell Fuel Oil Dealer. This program is specifically designed to increase sales . . . and profits.

You, too, can profit with the "Certified Comfort" Plan. Call the local Shell office for complete details. Remember, the "Certified Comfort" Plan is a Profit Plan for Shell Fuel Oil Dealers.

SHELL OIL COMPANY

SHELL

TIME FOR A CHANGE

. . . to

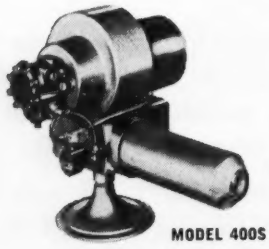
U.S.-CARLIN

-the MODERN line

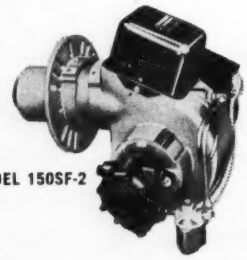
The modern U.S.-Carlin line puts you first in line for a rich share of oil burner sales in the big and booming remodeling market. Here's why . . .

- **U.S.-Carlin gives you *modern design* . . .** to meet today's demands for easy installation and fast, low-cost servicing.
- **U.S.-Carlin gives you *modern engineering* . . .** to burn today's improved, higher B.T.U. fuel oils cleanly and efficiently, delivering maximum heat with maximum economy.
- **U.S.-Carlin gives you *modern construction* . . .** utilizing today's best materials and methods to achieve the highest quality for long, dependable performance.

Get set now to get your full return of profits from remodeling. Contact your heating wholesaler or write us today for all the facts about U.S.-Carlin . . . the line that's in tune with the times.



MODEL 400S



MODEL 150SF-2

The U.S.-Carlin line includes models with capacity range from 0.50 to 20.00 G.P.H., both pedestal and flange mounted. High Temperature Combustion Head (Shell Head), vernier flame control, and delayed opening oil valve standard on many models. Bulletin 123-R56 gives specifications.

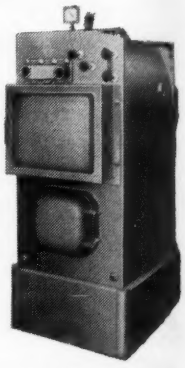
US CARLIN OIL BURNERS

THE CARLIN COMPANY
WETHERSFIELD, CONNECTICUT

THEY OUTSELL BECAUSE THEY EXCEL

Portmar three-pass boiler Series for commercial heating Applications

PORTMAR TP SERIES three-pass steel boilers are designed for automatic firing to provide steam and hot water requirements in commercial applications. Flue gasses pass first along the firebox crown sheet to the rear of the boiler, then through the lower row of tubes to the front of the boiler and back again through the upper row of tubes.



The boilers, ASME-constructed and SBI-rated, are available in 16 sizes; steam capacities range from 3,650 to 42,500 sq. ft.; water capacities from 5,840 to 68,000 sq. ft. Working steam pressure is 15 lbs.; with water, 30 lbs. Unit available also for 100 lbs. water working pressure.

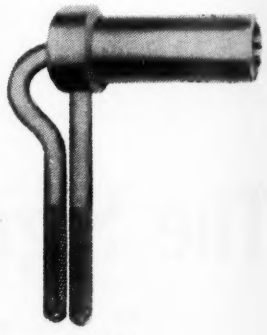
Made by: Portmar Boiler Co., 193 Seventh St., Brooklyn 15, N. Y.

Circle E8 on coupon, page 123

Tool for changing burner Nozzles is being manufactured by Delavan

DELAVAN MANUFACTURING Co., West Des Moines, Ia., has introduced a new tool for oilburner servicemen called the "Super Nozzle Changer."

This changer fits both ¾" and 11/16" hex adapters. It features one piece construction with broached sockets and a knurled handle which is designed to fit the hand comfortably.

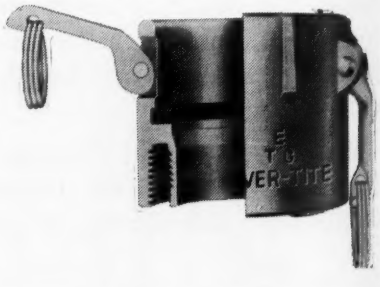


Made by: Delavan Manufacturing Co., West Des Moines, Ia.

Circle E9 on coupon, page 123

Ever-tite introduces light weight quick Coupler for fueloil Handling

A NEW "M.I.D." coupler has been introduced by Ever-tite Coupling Co., Inc., designed for gravity delivery of fueloil and transfer of other products up to pressures of 25 lbs. psig. Full flow is assured by the maximum inside diameter. It eliminates attaching a conventional hose coupling and then the addition of a quick coupling. The body portion is constructed of a single brass forging.



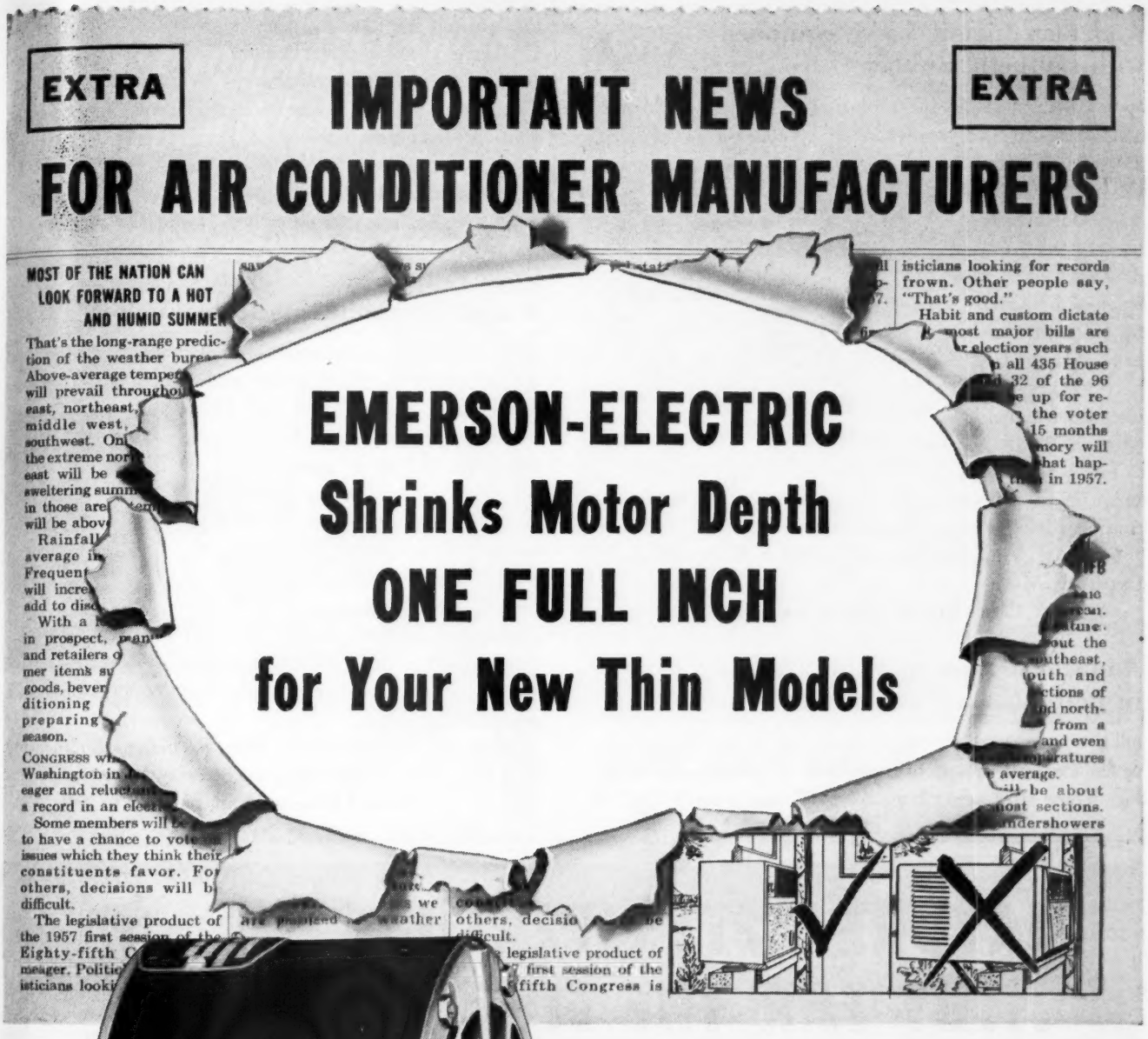
Made by: Ever-Tite Coupling Co., Inc., 254 W. 54 St., New York 19, N. Y.

Circle E10 on coupon, page 123

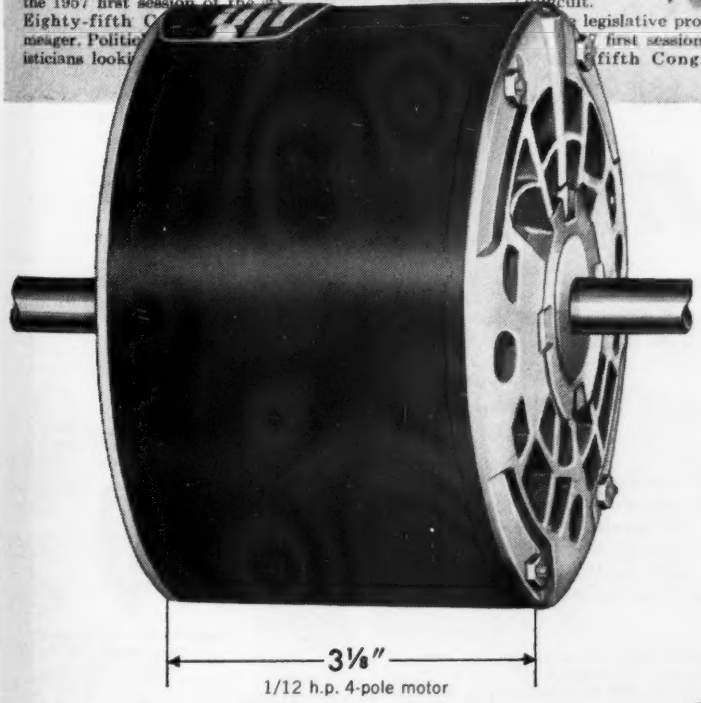
EXTRA

IMPORTANT NEWS FOR AIR CONDITIONER MANUFACTURERS

EXTRA



EMERSON-ELECTRIC Shrinks Motor Depth ONE FULL INCH for Your New Thin Models



1/12 h.p. 4-pole motor

The Trend for '58

More compact . . . yet *without* loss of power! New Emerson-Electric shaded-pole motors have been reduced *one full inch* between the motor hubs. You will need these thinner motors in designing your new models!

Call, wire or write Dept. M-87 today for complete information, The Emerson Electric Mfg. Co., St. Louis 21, Mo.

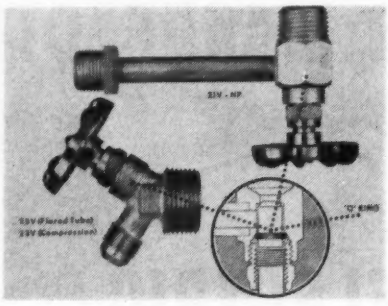
EMERSON-ELECTRIC of St. Louis

LIVE BETTER ELECTRICALLY

Since 1890

Anderson fueloil Valve equipped with synthetic Rubber O-Ring Seal

ANDERSON 20V SERIES fueloil shut-off valves feature flexible O-ring seals made from Buna "N" synthetic rubber. Type 25V angle design valve permits installation directly to oil tanks and drums; 21V-NP valve, 12" inlet by 3/8" outlet, allows direct connection to the underside of a fuel-oil tank and to the fueloil filter.



The basic design of the series can be adapted to pressures up to 500 psi for handling a variety of fluids, including fueloil Nos. 1 through 6.

Made by: Anderson Brass Co., 100 S. Campbell Ave., Detroit 9, Mich.

Circle E11 on coupon, page 123

Additional Sizes now are available in Bell & Gossett's Airtrol System

BELL & GOSSETT now offers three new boiler fitting sizes in its "Airtrol" system of controlled air in hot water heating. These sizes are a large 6" x 6" and a small 1½" x 1½" fitting for side-outlet boilers, and an ABFS 1¼" x 1½" fitting for top-outlet boilers.

The "Airtrol" system removes air right at the boiler. Thus, no air is permitted to enter the heating lines to cause noise or retard circulation.

Made by: Bell & Gossett Co., 8200 N. Austin Ave., Morton Grove, Ill.

Circle E12 on coupon, page 123

Reco Filter-Separator will remove Water, Contaminants from Fueloils

A RUGGED filter-separator of the replaceable-cartridge type by Richmond Engineering Co. removes condensed water, water-borne contaminants and solids from fueloils and other liquids with flow rates of 5 to 40 gpm. Known as the SV-11 or SV-11A the unit stands vertically on just one sq. ft. of floor space.

Maximum working pressure is 150 psi. Automatic controls handle the continuous discharge of the separated water. The cartridge is easily replaced and is an inch-thick wrapping of resin-bonded glass fiber on expanded metal.

Made by: Filter Products Div., Richmond Engineering Co., Inc., Seventh and Hospital Streets, Richmond 5, Va.

Circle E13 on coupon, page 123

FEATURE AFTER FEATURE
...BY FAR THE FINEST!

Klemm®
FUEL OIL FILTERS

• Exclusive CHEMISTONE® Elements • 17 Models
• Choice of Glass or Metal Bowls • Shut-Off Valve (Optional)

The many exclusive customer-pleasing features that you get in Klemm Fuel Oil Filters are positive evidence of quality construction and performance. Repeat sales assure you of lucrative and continued earnings. For safety, economy of operation and trouble-free performance, you'll find it pays to recommend and sell Klemm Filters. See your jobber . . . or write direct.

CHEMISTONE—Genuine filter, not a mere strainer! Traps moisture . . . removes dust, rust and scale to 1/14,000 of an inch.

Klemm PRODUCTS
DIVISION OF
KLEMM AUTOMOTIVE PRODUCTS COMPANY
1722 North Damen Avenue, Chicago 47, Illinois
EXPORT: Guiterman Co., Inc., New York 4, N. Y.

Exclusive: All models available with metal or glass bowl. Other popular I. P. T. sizes.

Model FF-530-V—3/8" opening
For: Central heating plants.

Model FF-430-G—3/8" opening
For: Central heating plants.

Model JR-60—1/4" opening
For: Space heaters, floor furnaces, etc.

*Model PK-158—1/4" opening
For: Space heaters, floor furnaces, etc.

*Model FF-430—3/8" opening
For: Central heating plants.

INCREASE EQUIPMENT SALES ...cut down delivery costs

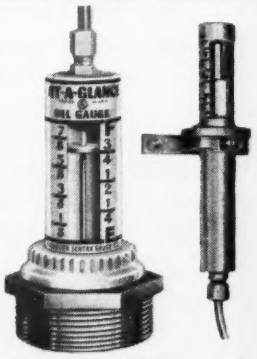
Sentry ODF* Tank Gauge tells drivers what they want to know *at point of delivery!*

"THAT LITTLE SENTRY GAUGE SURE SAVES US BOTH A LOT OF TROUBLE!"
TELLS WHEN OIL IS NEEDED
*Oil Dealer's Friend
. . . HOW MUCH IS NEEDED
. . . WHEN TO STOP FILLING
STOP FILLING
Sentry "ODF" remote reading gauge

ONLY *Sentry* OFFERS SUCH A COMPLETE LINE OF DIRECT AND REMOTE READING TANK GAUGES

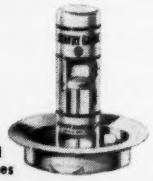
Above is SENTRY'S newest — The ODF At-A-Glance tank gauge that's setting new records in building sales and customer goodwill. Located outside of building at fill pipe, this easy-to-read weather-proof gauge shows the exact oil level in the indoor tank. Saves costly time consuming trips to basement, unnecessary hose unreeling and eliminates over-flow. Permits delivery without disturbing customer.

Other constant-register SENTRY gauges include combination tank and remote reading, barrel gauges, direct reading, and gauges for stove and space heater tank. Write today for full information about these fast moving business getters. Advertising aids available.



Combination At-A-Glance tank and remote reading gauges

Sentry stove and space heater gauges

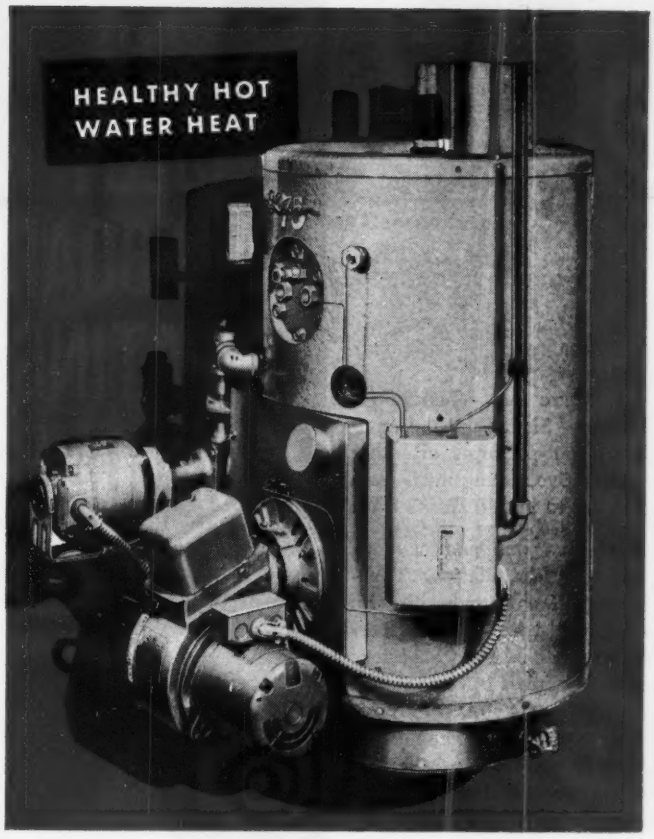

Sentry At-A-Glance barrel gauges

On guard— 24 hours a day

Sentry At-A-Glance tank gauge

Sentry superior quality Therma-Gauge

KRUEGER *Sentry* GAUGES
GREEN BAY • WISCONSIN



you can now get the Koven 75 for OIL or GAS

'KOVEN 75' is a quick selling profit making boiler. It is engineered to provide low-cost heat and plenty of rust-free hot water.

Fits through a 30-inch door in easy one-man handling crate.

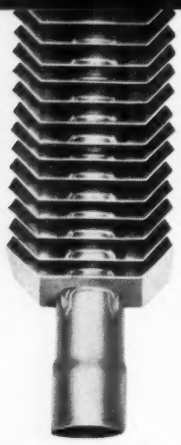
A COMPLETE PACKAGED UNIT ALL WIRED AND ASSEMBLED READY FOR FAST INSTALLATION

AN UNBREAKABLE FIRE DOME COMBUSTION CHAMBER ENTIRELY SURROUNDED BY WATER

A SINGLE PANEL FOR ALL SAFETY CONTROLS

Nationally Advertised

L. O. KOVEN & BRO., INC.
154 OGDEN AVE., JERSEY CITY 7, N. J.
PLANTS: JERSEY CITY, N. J. • DOVER, N. J. • TRENTON, N. J.

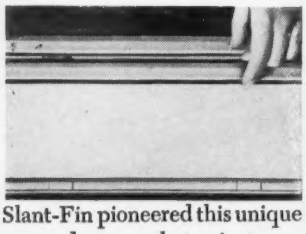


Per square inch – feature for feature – Slant-Fin out-engineers, out-performs all other competitive heating units—costs you less to install. *Here's why:*

Slant-Fin is designed for quick and easy installation. Time-saving piano hinges on end caps, wall trim, inside corners let you snap on every accessory without screws or tools – fast! *No cutting:* 4′, 5′, 6′, and 8′ lengths with telescoping extensions fit any job. And the patented slanted fins have no sharp edges to cut fingers.

Because of its revolutionary construction Slant-Fin has 29% *more* heating surface, provides increased air circulation because of flue action. Rigid tooth-and-bubble flanges lock fins together, create an element so strong you can actually stand on it. Fin-touch-fin construction soaks up sound, eliminates "ping" and "pong" noises.

Once a Slant-Fin unit has been installed, it will continue to operate at peak efficiency, *without* call-backs.



Slant-Fin pioneered this unique vane damper that pivots on stainless steel rivets, opens, closes, sets at any position with the flick of a finger.

Want to know more about Slant-Fin features that make your job easier? Write for our free booklet, "A NEW SLANT ON CUTTING BASEBOARD HEATING COSTS."

NAME.....

FIRM.....

ADDRESS.....

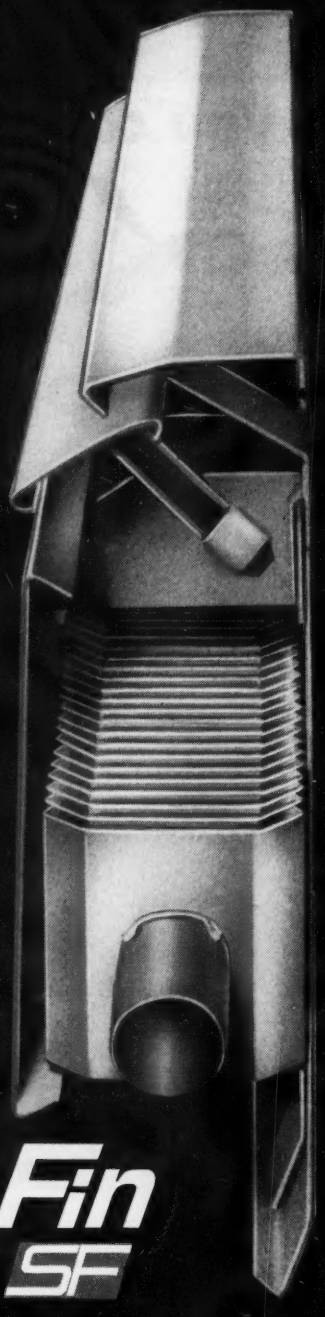
CITY.....STATE.....

Slant Fin SF

RADIATOR CORP.

87-53A 130 St., Richmond Hill, N. Y.

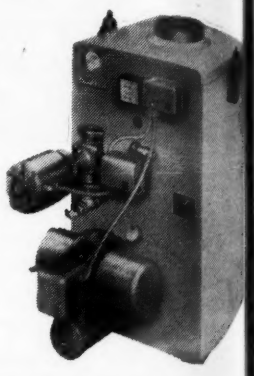
THE BEST BASEBOARD HEATING ANYONE CAN BUY!



. . . . New Products

Fluid Heat steel oilfired Boiler rated at 580 to 1,260 sq. ft. Steam

FIVE NEW Fluid Heat steel oilfired hot water boilers designed for residential requirements are now in production by the Heater & Tank Division, John Wood Co. The package units pictured are rated at 580 and 720 square feet for forced circulating hot water systems and are completely factory wired and assembled with burner mounted.



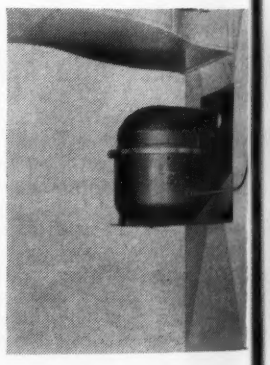
The other three units are rated at 720, 995 and 1,260 sq. ft. of hot water for either forced circulating or gravity systems. All units meet FHA standards.

Made by: Heater & Tank Division, John Wood Co., Conshohocken, Pa.

Circle E14 on coupon, page 123

Walton redesigns humidifier Model to up Output to 10 Gals. per Day

WALTON MODEL WF humidifier has been redesigned to increase its output to more than 10 gals. per day. Also, the unit now is installed only on the air return side of the furnace.



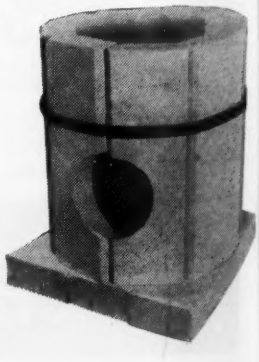
The humidifier operates on an atomizer principle so that its action is independent of the dryness of the air or other conditions which control the rate of operation. Manufactured of brass, copper and other non-ferrous materials.

Made by: Walton Laboratories, Inc., 1186 Grove St., Irvington 11, N. J.

Circle E15 on coupon, page 123

Glo-Lite combustion Chambers made by Refractories & Furnace Supply

SIX MODELS designed to handle from .75 to 3.00 gph are included in the "Glo-Lite" line of combustion chambers. These chambers are round and are made of light weight refractory material. The Vermiculite used to protect the unit during shipping can be used as a fill-in behind the chamber in the installation.



The chamber is installed without cement. A rectangular heavy duty refractory baffle tile is included with each chamber to be used when

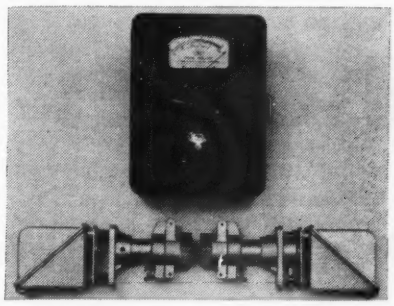
baffling is required. Also available are three rectangular fireboxes for larger jobs.

Made by: Refractories & Furnace Supply Co., 1042 Central Industrial Dr., St. Louis 10, Mo.

Circle E16 on coupon, this page

Fireye smoke density Indicator measures combustion Efficiency

FIREYE smoke density indicator system FE-3 provides continuous, accurate monitoring of smoke discharge and a overall measure of combustion efficiency. The system consists of Type 44 DY1 light source, Type 47FU9 photoelectric scanner, and Type 27VH6 smoke density indicator. Light source and scanner are installed on the stack or breeching. The density of smoke obscuring the light beam is measured and indicated directly on the smoke density indicator in both percent smoke and Ringelmann number. Chart recorders are available for the continuous record of smoke conditions.



Made by: Combustion Control Div., Electronics Corp. of America, 77 Broadway, Cambridge, Mass.

Circle E17 on coupon, this page

READER SERVICE COUPON

FUELOIL & OIL HEAT READER SERVICE
2 West 45th St., New York 36
REPLY CARD OCTOBER ISSUE
Mail Now—Coupon Expires December 31, 1957

Circle numbers of new product items on which you want more information:

NEW PRODUCTS

E1 E2 E3 E4 E5 E6 E7 E8 E9 E10
E11 E12 E13 E14 E15 E16 E17

ADVERTISEMENTS—Give page number and name of advertiser about whose products you want more information.

Page .....Advertiser .....

Your Name .....

Company .....Position .....

Street .....

City .....

Check Classification of principal dollar volume:
☐ Fueloil Dealer ☐ Parts and Equipment Jobber ☐ Manufacturer ☐ Manufacturer Employee ☐ Manufacturers Rep. ☐ Oilheating Dealer ☐ Other

WHEN LENGTH OF SERVICE COUNTS YOU CAN COUNT ON CENTURY OIL HEAT!

Most folks just naturally expect their furnace to last for many years. They figure on a cleaning bill now and then, but little more in the way of upkeep. They prefer to pay for durable heating equipment . . . the kind that's built to stand the test of time. That's the kind of customer that's just right for Century, the quality line of oil heating equipment.

- **Long 10 year warranty on heat exchanger**
- **Rugged high pressure, gun-type burner**
- **Trouble free controls—the finest made**
- **Famous "Crescent" heat exchanger, stress relieved and pressure tested**
- **Sealed cabinets finished inside and out**

For all the details on this wonderful Century oil heating line drop us a card today.

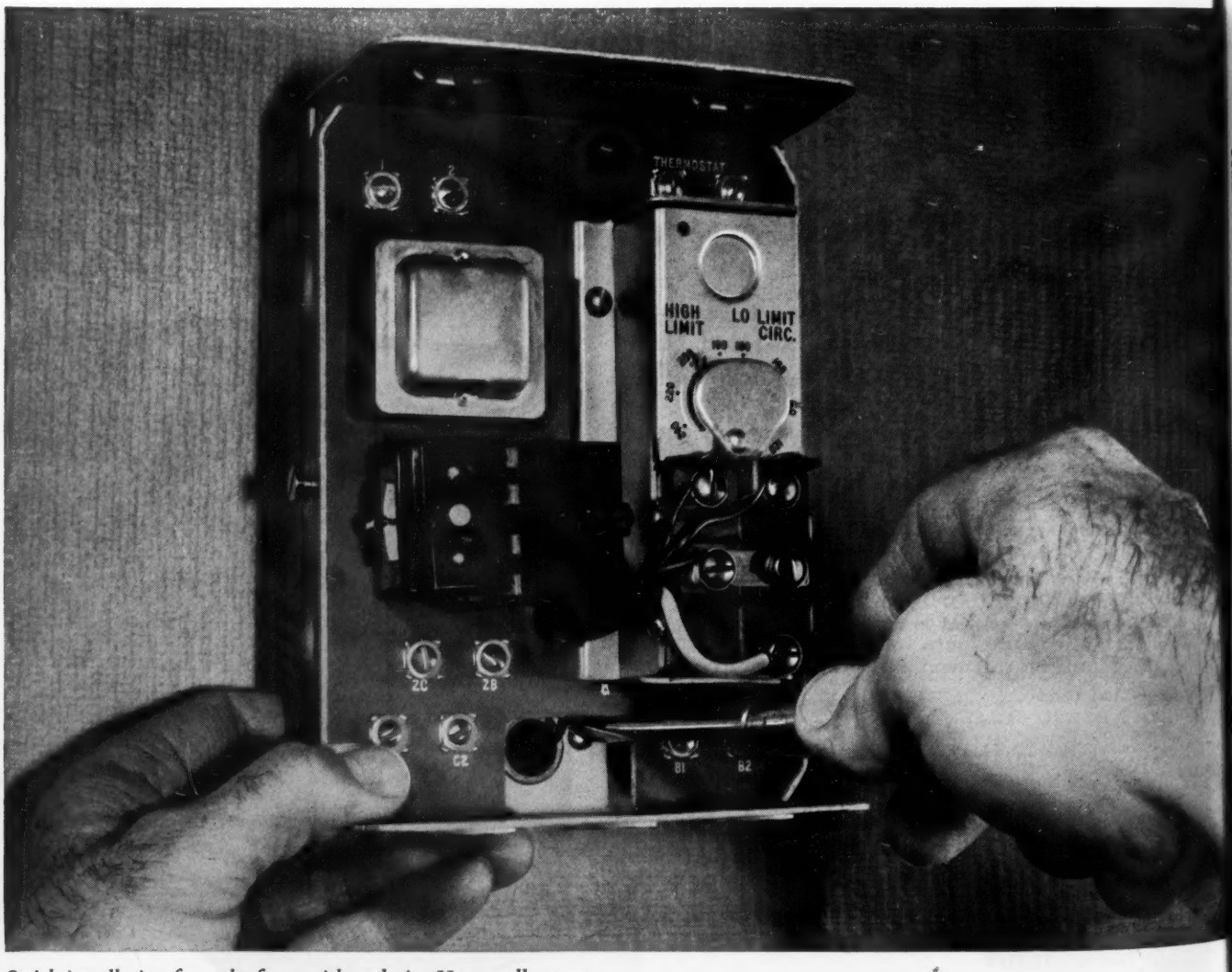
You can count on
Century
HEATING-COOLING
for comfort

CENTURY ENGINEERING CORPORATION
Dept. 208-F
Cedar Rapids, Iowa

A triple function Aquastat* plus relay ALL IN ONE!

Honeywell's Triple Aquastat-Relay, the L8024A, gives you:

- *High Limit Control*
- *Low Limit Control*
- *Circulator Control*
- *Circulator Relay*
- *Plus* easy *connection of second zone* ⟶

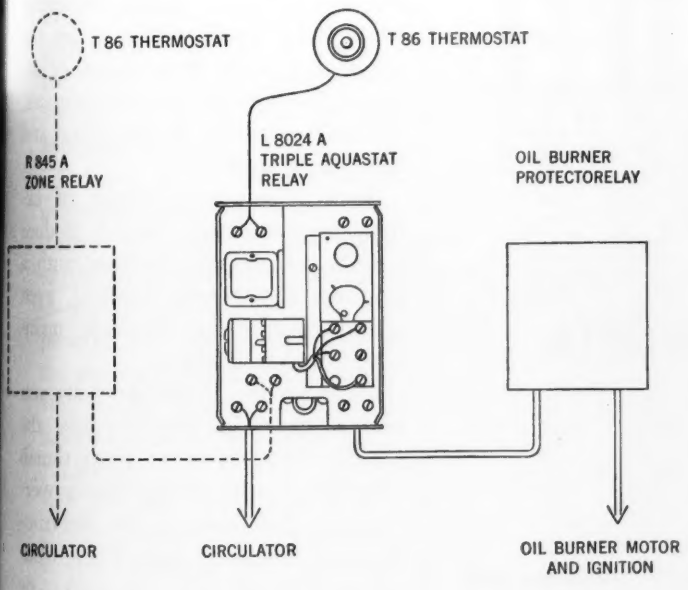


Quick installation from the front with exclusive Honeywell mounting clamp. The troublesome set screw on the well is eliminated.

THE L8024A is the heart of the oil-fired hydronics system. And the dotted lines in the diagram below show how easy it is to wire in a second zone to such a system. You merely connect with the second zone terminals provided on the L8024A. There's no more breaking apart existing control wiring to add another zone!

Settings are easier on the L8024A, too. And only one boiler tapping is required. You get fast acting response, easy-to-read settings, compact design and ease of installation. Specify the L8024A for all systems with tankless coils.

For horizontal mounting, specify the L8024C. And for full information on Honeywell's complete line of Aquastats and Aquastat-relay combinations, call your local Honeywell office. Or write Honeywell, Dept. FH-11-269, Minneapolis 8, Minn.



Typical oil-fired Hydronics Control System — dotted lines show ease of adding second zone.

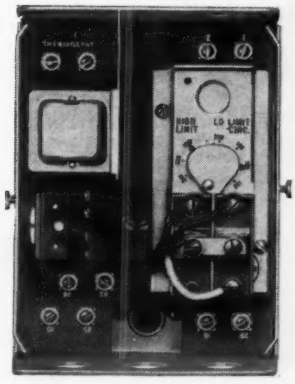
For further savings—order your boilers already packaged with a Honeywell Aquastat.

MINNEAPOLIS
Honeywell

First in Controls

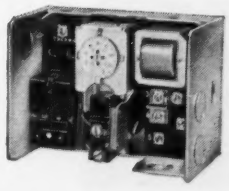
*Trademark

A complete line of combination Aquastat-Relays—plus 20 single function Aquastats to choose from

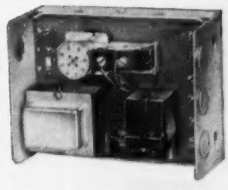


L8024E and F—New triple-function Aquastats for *gas-fired* boilers with 24 volt valves. Models for vertical or horizontal mounting. Also available are the L8024B and D triple Aquastat-Relays similar to the L8024E, F above, but designed for Powerpile* Gas Systems. Models for vertical and horizontal mounting.

Other combination Aquastats available for boilers with separate low limit controls to maintain domestic hot water supply, or for boilers without tankless coils.



L8048A and B—Combination high limit and circulator relays for *oil-fired* systems without tankless coils. Models for vertical or horizontal mounting.



L8048E and F—Combination high limit and circulator relay for *gas-fired* systems without tankless coils. Models for vertical or horizontal mounting.

Readers' Problems

Q. How do you fire a pressure burner at the uneven or odd gph rates such as 1.1 or 2.6 gph often listed on labels as the proper rates for certain furnaces and boilers?

R. M. A., Wausau, Wis.

A. Seldom do servicemen split hairs handling the problem, because on most jobs firing 1.0 gph gives results practically the same as those that come of firing 1.1 gph; firing 2.50 gph is little different than firing 2.6 gph.

Many furnaces and boilers rated for firing rates above about 1.50 gph actually are oversize for their loads, therefore give best results fired by usual nozzles of gph capacities appreciably lower than the maximums for which the furnaces and boilers are designed. In general, try using the lowest gph rates that provide adequate heat—also adequate hot water on year-round boiler-type jobs.

Q. Where can I obtain a list showing the proper CO_2 reading of each make of burner? Also a lits showing the proper over-fire draft and smoke-outlet draft for every make and model furnace and boiler, especially large boilers fired above 25 gph?

V. M., Norwalk, Conn.

A. Your delving into combustion testing is excellent, but your thinking is a bit incorrect to start out. No lists of the types you request are available.

High CO_2 readings of 10% to 11%, together with low smoke-instrument readings of No. 2 or No. 3, are the result of (1) excellent oilburner design, (2) excellent installation work, and (3) excellent maintenance and adjustment work.

True, a gun-type burner of extremely poor design cannot produce a 10% CO_2 reading together with a low smoke-instrument reading, even though excellently installed, maintained, and adjusted.

To solve the draft problems you ask about. First, simply follow the old, old, FUELOIL & OIL HEAT thumb rule, and adjust for the lowest over-fire draft that does not give the troubles of insufficient draft. These troubles include oil odor, or smoke, or soot in the equipment room—and flame pulsation on a few rare jobs. You'll wind up with the proper smoke-outlet draft, taking into account automatically the draft-drop of the furnace or boiler, because only the proper smoke-outlet draft gives you the proper over-fire draft.

If you ask furnace and boiler manufacturers about this, you will find out that different furnaces and boilers need greatly different amounts of smoke-outlet draft. A given model needs high smoke-outlet draft when fired hard, and lower smoke-outlet draft when fired lightly.

The over-fire draft-control systems used for high-capacity boilers have

Heat-Resisting Sheared to Size

Advantages of Heat-Resisting Steel Combustion Chambers

- No breakage in shipment or handling
- Lighter weight lowers freight costs
- Quicker heating—greater efficiency
- Cleaner heat—better temperature control

Save time and money by fabricating your oil burner combustion chambers from sheared-to-size Ingersoll heat-resisting stainless steel.

This special steel is correct in analysis to withstand high temperatures . . . consistently uniform in quality . . . and has exceptional forming characteristics.

Ingersoll will custom shear it to your specified blank sizes, or multiples thereof (depending on size). And Ingersoll's flexible facilities are geared to handle large jobs or small ones with speed and precision.

Ingersoll does not fabricate combustion chambers

Write, wire or phone for details

B-W Borg-Warner

Ingersoll STEEL DIVISION
Borg-Warner Corporation
New Castle, Indiana

the great advantage of providing for this automatically. Such a system maintains the over-fire draft at the proper level for all flame sizes given by a modulated-firing oilburner—for smallest flames all the way up to largest flames.

Q. Replacing old thermostats by new-rapid acting thermostats, which act as they should, in almost every case I get complaints that the new thermostat starts and stops the oilburner too often. My jobs are all furnace-type. Sick of these call-backs and headaches, I ask you how to end them.

G. W. K., Columbus, Ohio

A. First, explain beforehand to the owners that the new thermostats are designed to provide the much greater heating comfort that results from shorter oilburner "on" and "off" periods. Tell them the old thermostats are being replaced mainly because they give long oilburner "on" periods and bumpy heating.

Second, on jobs where this seems advisable, start out with the new thermostats adjusted for minimum sensitivity — consider adjusting them to provide seven to ten minute "on" periods. Use your own ideas about the proper number of minutes in an "on" period that matches the installations . . . and the occupants.

Later, if you find this works out well for you, you can adjust for greater thermostat sensitivity and shorter oilburner "on" periods, advising the occupants you are doing this to improve their heating comfort still further.

Q. Constant-ignition service competition has increased. Units are coming through with constant igniters.

1. Transformers wear out quicker, ignition points burn out quicker, more service calls.

2. Noise, electricity increased.

3. I can't see the point for small gallon fire. Would there be any higher efficiency?

M. S. G., Taunton, Mass.

A. We are in difficulties understanding parts of your letter. We aim these points to help you.

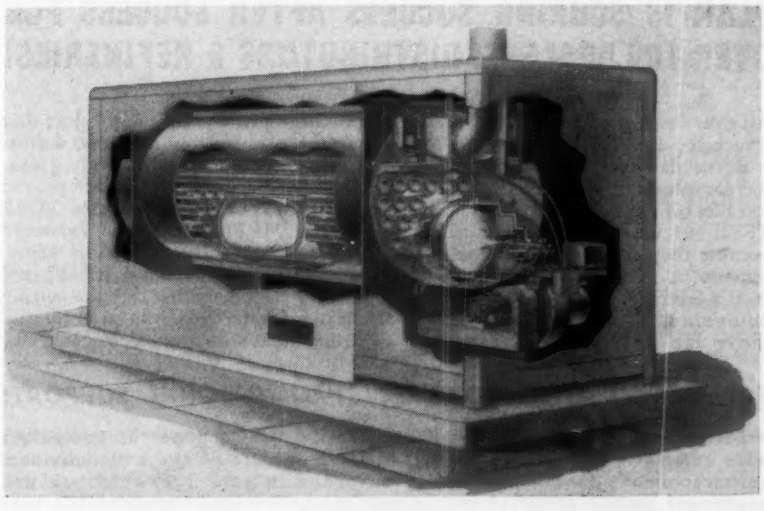
First, usually a burner said to be designed for constant ignition can be used with either constant ignition or intermittent ignition. On the other hand, certain manufacturers declare their burners are designed for only intermittent ignition, and that overheating of air-handling parts at the end of the gun tubes will be caused by using constant ignition.

Second, while you list what you find to be the most important disadvantages of constant ignition, you list no advantages of such ignition. Greater safety is the most important advantage of constant ignition, according to several important burner manufacturers who for many years have offered burners only for constant ignition. Using such ignition for a burner connected to an outside tank, for example, the spark will be on all the time the burner motor is running; this is advantageous if the spray of oil from the nozzle starts and stops momentarily because of suction-line leaks, or because the job is running out of oil. Less important to oilburner enthusiasts, primary controls and wir-

By the makers of world-famous home heating equipment

NEW! THE BETHLEHEM DYNATHERM MODEL 100

for MOTELS, GREENHOUSES, SMALL CHURCHES, APARTMENTS, GARAGES



• Biggest heating plant value on the market! • 480 gallons of hot water per hour! • Built to A.S.M.E. specifications! • Thoroughly tested in the field for two years . . . all units tested recorded efficiencies better than 80%, used 40 per cent less fuel than the heating systems they replaced! • Only 41" high, 31" wide and 78" long. • Pays for itself in 5 years! BIG PROFITS FOR YOU!

There is a big demand for the Model 100—wire or write today for full information!

BETHLEHEM FOUNDRY & MACHINE CO.

BETHLEHEM, PENNSYLVANIA

ing are somewhat simpler and less expensive on constant-ignition installations.

Third, estimate the yearly cost of the extra electricity used by the constant ignition, to gage whether or not the increased safety it allegedly provides is worth the extra cost. Several studied installations in the New York area used 100 kwhr additional per year when constant ignition was used. At 2¢ per kwhr, that's $2 a year more for electricity.

Fourth, certain burners are quieter using intermittent ignition, whereas others are quieter using constant ignition. With intermittent ignition, some flames become quieter after the spark stops, others become noisier.

Fifth, efficiency of the flame usually does not enter the matter. However, you can find out for yourself if the flame is more efficient with the ignition spark on or off. Simply make tests of CO_2, stack temperature, and smoke —with the spark on, and with it off.

Sixth, on thousands of constant ignition installations, the problem of the spark tips shortening is not great, and is solved by advancing the tips a fraction of an inch every three years or so.

Violence and vehemence need not enter discussions of the advantages and disadvantages of each type of ignition. Choice of the type ignition is not a life-or-death matter. Certain oilheating experts settle the matter simply by providing their installations with controls and wiring that permit a serviceman to set up in a matter of seconds for either constant or intermittent ignition. These installations should have ignition transformers which are truly excellent—which will give years upon years of service connected either for constant ignition or intermittent ignition.

151 NEW CUSTOMERS IN FIRST TEN DAYS!

Reported by **GUNNING OIL LTD.,** *Niagara Falls, Ont.*

"Response to our introduction of HY-TEST 303 Dehydrated Fuel Oil has been beyond our greatest expectations. It proves to us that oil users will act to get a truly better product that will save them money and add to their heating comfort. The HY-TEST 303 advertising and publicity campaign prepared for us did the greatest job ever seen here in getting our story to the public."

WILLIAM B. GUNNING, *President*

THE EXCLUSIVE HY-TEST 303 MERCHANDISING PLAN IS SCORING SUCCESS AFTER SUCCESS FOR OVER 100 DEALERS, DISTRIBUTORS & REFINERIES!

All over the United States and Canada franchised HY-TEST 303 dealers are winning new customers by offering this revolutionary high-performance red fuel oil at regular oil prices. HY-TEST 303 dealers sell *more* fuel oil because they offer *more* to their customers.
A HY-TEST 303 franchise puts *you* miles ahead of all competition! Additive HY-TEST 303 converts your present oil to a premium product that eliminates heat-robbing soot formation, gels, sludge and corroding condensate. You sell *and deliver* proven SAVINGS UP TO 20% IN FUEL CONSUMPTION! The *exclusive* HY-TEST 303 truck-mounted Dehydrator & Filter is strong visible proof to your customers that they are getting cleaner, water-free oil—a customer-keeper that's impossible to beat!

YOU GET ALL THIS POWERFUL PROMOTIONAL SUPPORT!

• Exclusive use of the HY-TEST 303 trademark • Newspaper ad campaigns with complete mats ready to run • Radio transcriptions and individual commercials • Complete publicity coverage in your area • Truck and equipment decals • Direct mail campaigns • Personal consultation with our marketing experts to develop the program best suited to your needs.

Write today for full details plus reports from other outstanding dealers. Match their *proven* business gains against *any* others and then decide!

HY-TEST 303

JOHN VALK, Jr., President
HY-TEST 303 CORP.
9 Meadow Rd., Rutherford, N. J.

Send me full details of HY-TEST 303 business-building exclusive franchise.

FIRM .....
ADDRESS .....
CITY .....STATE .....
BY .....

Q. When certain stack controls should start their burners, what makes them start and stop the burners two or three times before the burners finally continue running as they should? This seems to happen to stack controls a year old or older. Does this naturally happen when a control gets old?

G. H. E., Menasha, Wis.

A. Yes, such stack control misbehavior may occur as the controls become old; most new controls do not give the trouble. Many servicemen are familiar with the trouble and can end it in a matter of minutes by making on-the-job adjustments of the controls. Other servicemen, fearful of altering the stack controls in a way that winds up with them providing no protection or reduced protection, have the defective stack controls repaired by companies which specialize in such work, or by the manufacturers.

A stack control which gives this trouble has one set of contacts (often called "cold contacts") which is closed when the smokepipe has dropped in temperature; for the oilburner to start, this set of contacts must be closed. The control has another set of contacts ("hot contacts") which closes when the smokepipe becomes warmer. The trouble you describe simply is the result of the second set of contacts failing to close before the first set of contacts open—when the stack control should be starting the burner.

The burner motor starts, the smokepipe becomes slightly warm, and

therefore the "cold contacts" open their circuit. At that second the burner motor stops—because the "hot contacts" have not closed as they should. In a matter of minutes the burner motor starts again because the smokepipe temperature drops and the "cold contacts" close again. That may go on and on, until by lucky chance the "hot contacts" close on a burner start-up before the "cold contacts" open.

Some homeowners who experience this trouble can luckily get out of it simply by turning off their oilburner main switches an hour or so; that permits their stack controls to cool off completely, and causes proper sequencing of the action of the "cold contacts" and "hot contacts."

You should obtain complete information about this trouble and the remedy for it from the manufacturer of the stack controls giving the trouble.

Q. I applied 110 volts to the primary of a 10,000-volt ignition transformer with no wires connected to its secondary; it produced no spark. That ruined the transformer; it broke down because of internal shorting in its secondary circuit. First, did I make a mistake that ruined the transformer? Second, will doing what I did ruin any transformer?

J. B. R., Selleck, Wash.

A. Answer to both your questions: The transformer was weak or defective. Your procedure would not have ruined a healthy transformer. To be extremely cautious, provide a spark gap for the secondary circuit of a transformer when you give current to its primary—if you think the transformer may be the one in a thousand which is weak, ready to break down.

Q. A circulator relay hums badly, and owner complains. With relay "on" and humming, I bang it hard. It stops humming. Later it hums again. What's the cause of the hum, please, and what's the cure?

R. E. I., Lakewood, Ohio

A. The cause is loose laminations in the relay. Better replace it, then find out if its manufacturer can repair it. Or ask a motor repairman, or a specialty company repairing oilburner parts, to repair it.

Q. Why does my experimental pressure burner give more smoke using No. 5 oil than No. 2 oil, even with the No. 5 heated enough to reduce its viscosity to that of unheated No. 2 oil? I am puzzled.

E. J. V., Brooklyn, N. Y.

A. No. 5 fueloil is of a different chemical make-up than No. 2 oil, causing the heavier oil to be more difficult to burn clean. Your heating the No. 5 oil reduces its viscosity, but does not burn cleaner than No. 2 oil.

Q. New at servicing burners, I wonder if I follow common practice when I recommend a switch to kerosene oil, range oil, No. 1 oil, etc., for the owner of a 1.5 gph gun burner. Reason is my best efforts do not keep furnace flues absolutely clean, as the owner demands they should stay.

O. U. K., Lockport, N. Y.

A. The owner is demanding too much of you. Use a smoke-checking instrument to prove the burner does

Ask any Herco Dealer . . . he'll tell you

Why HERCO is hard to beat.

HAPPY WITH HERCO—

Dealer, customers, serviceman (even the serviceman's wife!) like Herco's dependable, headache-free service. Each unit is individually fire tested at the factory to guarantee its efficiency.

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You get honest quality and value in a *complete* package. You also get factory guarantee and factory service. You can depend on Herco to back you up, always!

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MORE VALUE MORE PROFITS

The quality, better value and genuine satisfaction guaranteed with each Herco unit increases your profits on every installation.

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Complete Lines of Packaged Units—all Factory Fire Tested.
BOILER-BURNER UNITS—Eight sizes, 115 to 840,000 BTU.
HOT WATER SUPPLY BOILERS—Seven sizes, 100 to 1000 gph.
WARM AIR FURNACES—10 models, completely assembled.
OIL BURNERS—Firing rates 0.5 to 20 gph.

HARVEY SERVICE PACKAGES—

HARVEY PACKAGE No. 2

EVERYTHING YOU NEED FOR NOZZLE SERVICE

***25 Assorted Nozzles and Strainers individually packed in dustproof, clearly marked plastic containers.**

18 Extra Assorted Strainers
6 Nozzle Adaptors
1 Nozzle Brush
Packed in spill-proof metal box.

TRADE PRICE $24.95

*Your own selection of nozzle sizes — Hollow or Solid Cone. Standard assortment of Solid Cone Nozzles furnished as standard.

Service departments make money when service calls are completed on the first trip.

These Sid Harvey Service Packages enable you to have the right part in your service car for 90% of your replacement needs.

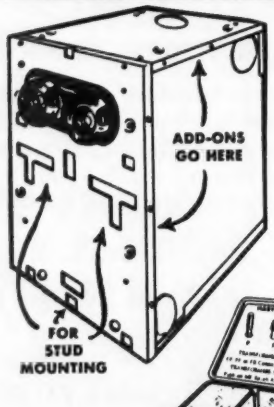
Avoid comebacks, make-shift repairs, and dissatisfied customers. *Do the job right the first time* —

The total cost of these packages is only **$161.60**

Includes Coupling Package 11A

(for alternate Coupling Package 11D, add 84c)

Packages also sold separately. Other Harvey Packages, plus a complete line of replacement parts, both new and rebuilt, are listed in Sid Harvey's new catalog. Get your copy today — it's FREE to dealers. Write on your letterhead.



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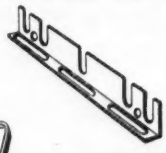
HARVEY PACKAGE No. 76

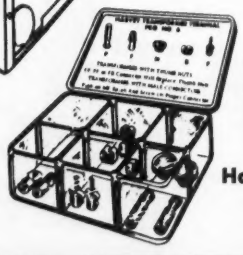
REPLACES 80% OF ALL 10,000 VOLT, 2 POLE TRANSFORMERS

1 Universal Transformer Body
5 Sets of Add-Ons
12 Interchangeable Hi-Tension Terminals
3 Wing Nuts and Bolts

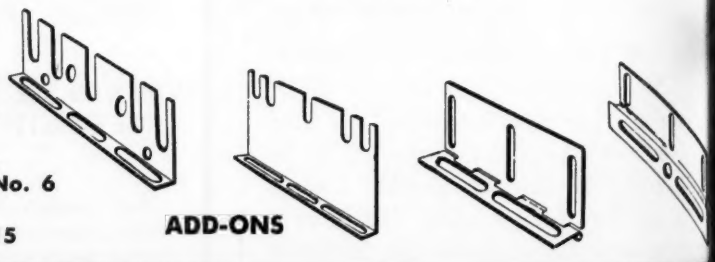
TRADE PRICE $18.40



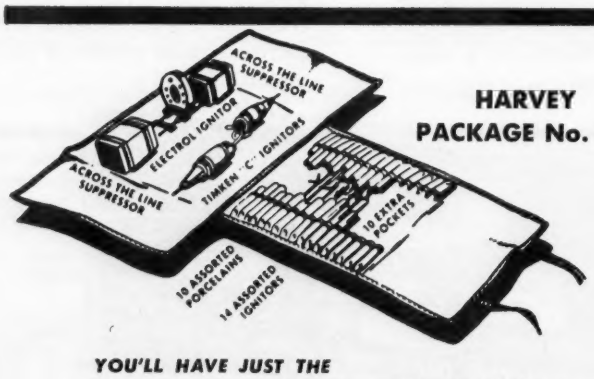
12 Interchangeable Hi-Tension Terminals Included in Pkg. 76



Sold separately as **Harvey Package No. 6** (see left)
TRADE PRICE **$3.15**



ADD-ONS



HARVEY PACKAGE No. 5A

YOU'LL HAVE JUST THE IGNITOR YOU WANT — WHEN YOU WANT IT

17 Popular Ignitors
10 Separate Porcelains
2 Radio Noise Suppressors
In fitted canvas roll

TRADE PRICE $19.95

HARVEY PACKAGE No. 6B

ALL YOU NEED TO REPLACE WORN, FRAYED OR OIL SOAKED IGNITION LEADS

130 Assorted Rajah Terminals
1 Rajah Crimping Tool
In fitted canvas bag. Cable not included.

TRADE PRICE $21.85
100' Roll Ignition Cable $5.95

Essential to Profitable Service

HARVEY PACKAGE No. 11A

Lovejoy
3-piece
couplings

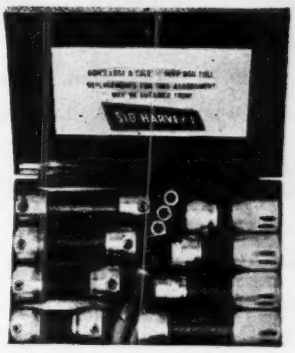
MAKES A FLEXIBLE COUPLING FOR ANY STANDARD COUPLING REPLACEMENT

13 Metal end pieces
15 Composition center pieces
2 Metal center pieces
2 Spline adaptors
Packed in metal box.

TRADE PRICE $9.00

HARVEY PACKAGE No. 11D

Harvey
1-piece
couplings



ONE PIECE COUPLING REPLACEMENT FOR ANY STANDARD COUPLING

4 assorted lengths (1/2" x 7/16" bore)
4 assorted lengths (spline)
5 Shaft Bushings (7/16" x 5/16")
Packed in Metal Box.

TRADE PRICE $9.84

Package No. 11C Deluxe Assortment
Same as Pkg. 11D except:
14 Couplings and 14 Shaft Bushings.

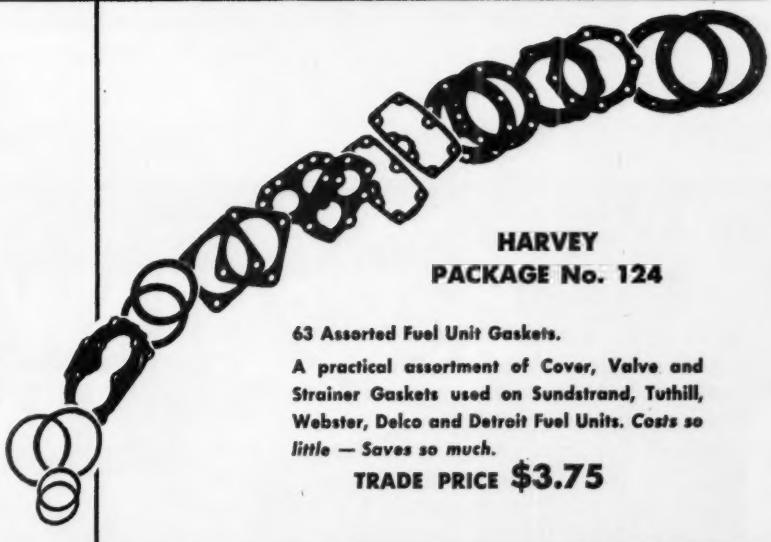
TRADE PRICE $18.25

HARVEY PACKAGE No. 119

ELIMINATES TANK HUM, SUCTION AND RETURN LINE PULSATIONS

An Assortment of 28 replacement diaphragms for all modern Sundstrand Fuel Units.

TRADE PRICE $2.48

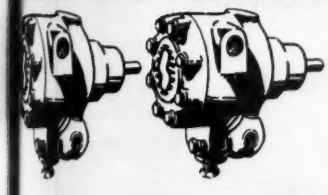


HARVEY PACKAGE No. 124

63 Assorted Fuel Unit Gaskets.

A practical assortment of Cover, Valve and Strainer Gaskets used on Sundstrand, Tuthill, Webster, Delco and Detroit Fuel Units. *Costs so little — Saves so much.*

TRADE PRICE $3.75



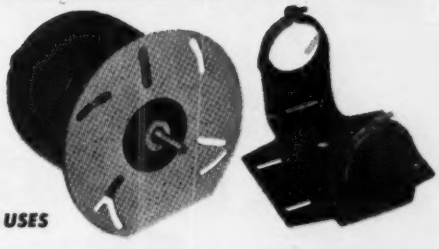
HARVEY PACKAGE No. 77

MAKES OVER 950 PUMP REPLACEMENTS

2 Sundstrand hub type Fuel Units — one clockwise, one counter-clockwise
7 Mounting Flanges
17 Mounting Bolts
4 Nozzle Line Adaptor Fittings
2 Shaft Bushings

TRADE PRICE $40.27

HARVEY PACKAGE No. 38



ONE MOTOR, EIGHT USES

Replaces any standard 2, 3 or 4 hole flange mounted motor and any base mounted motor.
1 Reversible 1/4 HP motor
1 Adaptor flange
1 Cradle mounted base

TRADE PRICE $20.95

SID HARVEY INC.
VALLEY STREAM, NEW YORK

fueloil & oilheat

not produce excessive smoke and soot. The switch to more expensive fuel would be most unusual, probably is not justified.

Q. Testing draft on small jobs, I find something I never read about. Smoke-outlet draft may be .03", and instead of being lower (considering draft-drop of boiler) the over-fire draft is higher, say .03½" or .04"—please explain?

S. F. W., Joplin, Mo.

A. That's not highly unusual and is caused by the chimney effect within the boiler itself. In these cases, the boilers are not high "chimneys," but the temperatures of the gases in them are much higher than in ordinary chimneys.

Q. As an exporter, I'm informed that in a certain foreign country the price is the same for light oil like our No. 1 or 2, and heavier oil between our No. 4 and 5. If that's true, which oil should be used in the burners I send there?

E. O. F., San Francisco

A. The lighter fueloil should be used, according to most oilheating engineers. At the same price, it's the better buy.

Q. In a new development where I installed over 40 oilburners, several voltmeters show the voltage always runs 122 to 124 volts instead of the intended 115 volts. Can the high voltage be causing the trouble I'm having with many room thermostats?

R. M. A., White Plains, N. Y.

A. Almost certainly not. But play safe and put your question to the manufacturer of the room thermostats.

Q. I import and export a great variety of oilburner devices including different kinds of burners for different oils capable of carrying smallest to largest heating loads. Do you agree with me that, able to buy light fueloil or extremely heavy fueloil at the same price, most generally a man planning to buy a new oilburner installation should lean towards the light fueloil?

O. F. L., Paris, France

A. Many American oilheating experts agree with you. Consider, however, that though more difficult to burn, the much heavier fueloil contains more Btu's per gallon (check this in tables based on gravity of the fueloil, and take into account that the heavy fueloil may contain greater percentages of unburnable impurities than the light fueloil). Consider also the probable continued future availability of both fueloils at the same prices. Burners capable of burning the heavy fueloils also can burn the light oils, thus provide advantageous flexibility. For that reason alone, often they are selected for big installations.

Q. Am I correct in aiming to use no lower firebox draft than .01" for smallest jobs, and no higher than .05" for my largest jobs, both gun burner and rotary-cup burner types? The .05" applies to firing rates from 15 to 35 gph. Results have been excellent.

I. P., Montreal, Que.

A. Obtaining excellent results—and you certainly used combustion-testing instruments to be able to say that—you have no reason to switch ideas about aiming for proper over-fire draft. Many oilburner installers and manufacturers agree that you have been aiming correctly.

More than a Recap!
. . . that's what you get with
HAWKINSON TREADS
Because
A TREAD TO SUIT YOUR NEEDS
• RUN COOLER • LAST LONGER
• GIVE BETTER TRACTION
• BETTER PERFORMANCE
CURED THE WAY THEY RUN
AUTHORIZED HAWKINSON TIRE TREAD SERVICE
TRADE MARK REG. U.S. PAT. OFF.
Authorized HAWKINSON TREAD Service
In Principal Cities U. S. A., Canada and Foreign Countries
Minneapolis ★ PAUL E. HAWKINSON CO. ★ Minnesota

Oilheating Handbook issued by Minneapolis-Honeywell

MINNEAPOLIS-HONEYWELL has published a new residential oilburner controls handbook.

Forming a condensed guide for installation and servicing, the booklet contains sections dealing with stack-mounted relays, electronic relays and flame detectors, oil valves, trouble-shooting tips and conversion hints. Installations of both new and old models of Honeywell controls are covered.

This handbook, third in a series on installation of thermostats and relays may be obtained from Minneapolis-Honeywell, (Merchandising Division), 2753 Fourth Ave. South, Minneapolis 8, Minn.

Robertshaw-Fulton Company gives Division new Name

INSTRUMENT DIVISION is the new name of the Fielden Instrument Division, Philadelphia, Pa., Robertshaw-Fulton Controls Co. The division makes precision devices for temperature measurement.

Stoddard Manufacturing Co. leases Plant in Arkansas

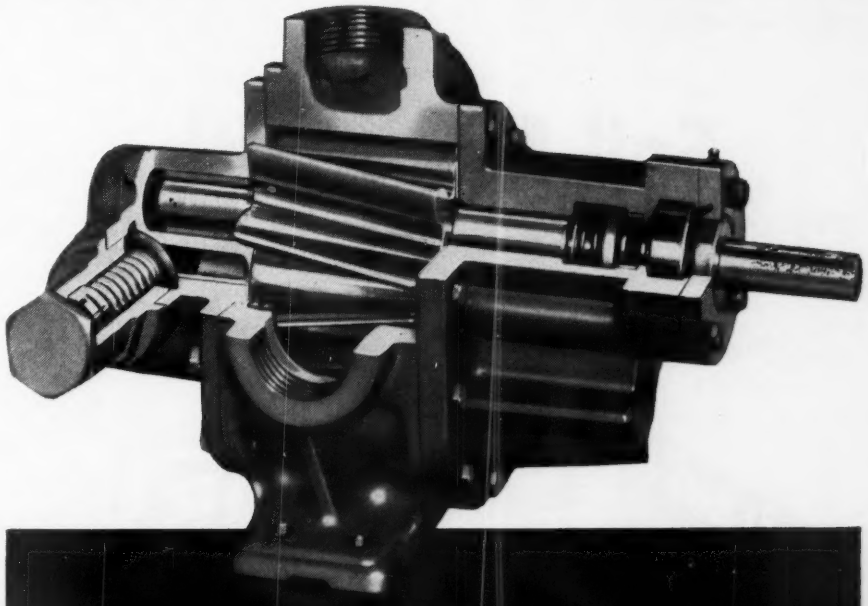
STODDARD Manufacturing Co. has taken a 20-year lease on a factory and office buildings being constructed on the Clarendon Industrial Development property, Clarendon, Ark. The company's sixth plant will manufacture electro-static furnace and air conditioner filters and several other new products.

Airtemp Division appoints three new sales Managers

THE REORGANIZATION of Chrysler Airtemp sales division, now in effect, included in the creation of several new home offices and field posts the appointment of three home office managers.

All members of the staff of S. Anderson, director of Zone Opera-

SPECIFY
ROPER
ROTARY PUMPS



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TANK TRUCKS
TRANSPORTS
BULK TRANSFER
40-300 GPM • PRESSURE TO 100 PSI

Furnished in hi- and lo-drive design — 40-300 GPM sizes, pressures to 100 PSI. A rotary unit, with accurately machined alloy iron gears . . . heavy duty bronze bearings . . . hardened steel drive shaft . . . with mechanical seal — (packed box, if desired). Adjustable relief valve is standard. Bulk plant units on bedplate, with or ready to receive motor, are also made by Roper.

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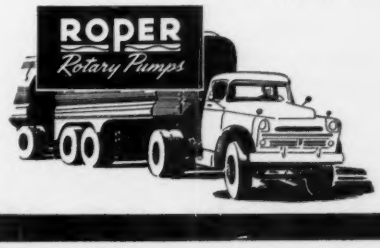


GEO. D. ROPER
CORPORATION
771 Blackhawk Park Ave.
Rockford, Illinois

tions, J. A. Clarke is manager in charge of dealer development, commercial-residential airconditioning and heating; while H. A. Dillon heads dealer development room airconditioners; and J. C. Davidson has charge of technical services.

Air Conditioning booklet written for Homeowners

A FULL COLOR illustrated booklet intended to explain the fundamentals of central airconditioning to homeowners has been published by the Heating and Air Conditioning Division of National-U. S. Radiator Corp., Johnstown, Pa.

Entitled "What every homeowner should know about airconditioning," the booklet discusses factors which influence airconditioning costs, and as written in cooperation with practicing architects, builders, and contractors, offers suggestions for possible lower cost, more efficient airconditioning systems in new homes in the planning stage.

Copies are available at each National-U. S. branch office or may be obtained from the home office Marketing and Promotional Department, P. O. Box 1047, Johnstown, Pa.

45th Store in Sid Harvey Chain opens in Richmond

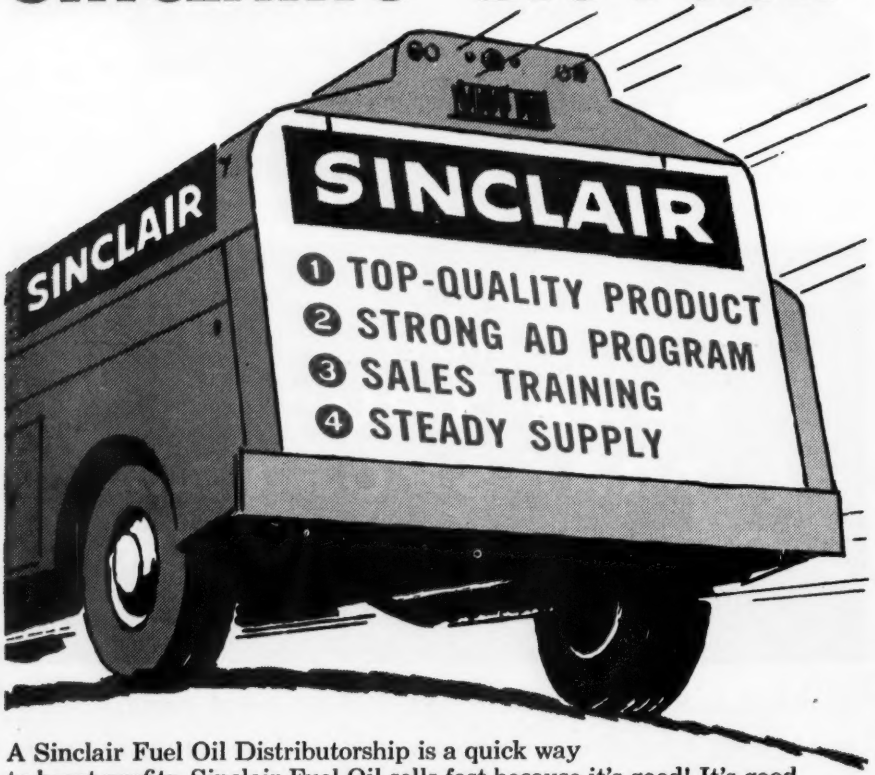
SID HARVEY, INC., Valley Stream, N. Y. has opened the 45th store in its chain at 2215 N. Lombardy St., Richmond, Va. The store, under the management of Jerry Skakal, long associated with the Sid Harvey Virginia organization, handles the firm's line of oilburner replacement parts.

Booklet of safety Controls for steam Boilers issued

BASIC SAFETY controls for low pressure steam boilers are the subject of a new booklet published by McDonnell & Miller, Inc., Chicago, Ill. It is a companion-piece to a previously-issued booklet covering safety controls for hot water space heating boilers.

The new "steam" booklet gives the "why" and "how" of authoritative methods of providing maximum safety

Sell More with SINCLAIR'S "BIG FOUR"



A Sinclair Fuel Oil Distributorship is a quick way to boost profits. Sinclair Fuel Oil sells fast because it's good! It's good because continuous testing and improvement at Sinclair's research laboratories at Harvey, Illinois, help make Sinclair Fuel Oil a better product.

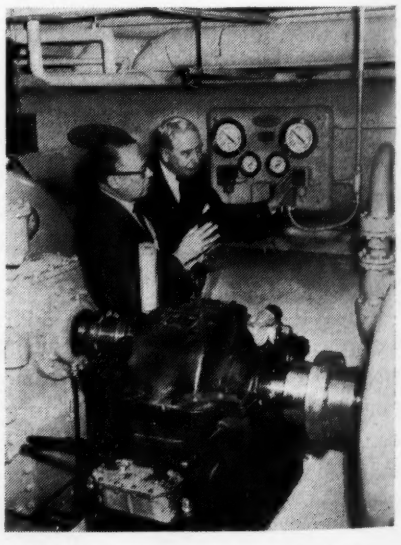
Sinclair Distributors get extra sales support. Strong ads are designed for local use.

A special sales training program offers new profit-making ideas.

Sinclair Distributors enjoy a steady and ample supply of products — thanks to Sinclair's vast production and storage facilities.

Build a better business for yourself. Increase your profits. Write for details *today*. Sinclair Refining Company, 600 Fifth Ave., New York 20, N. Y.

SINCLAIR FUEL OIL *with* RD-119®



Rockefeller Center, New York, N. Y., a 15-building development constituting the world's largest privately-owned business and entertainment center, is now home of the world's largest air conditioning installation for office buildings. G. S. Eyssell, president of Rockefeller Center, Inc., and Cloud Wampler, chairman of the board of Carrier Corp., (right) press the button which activated two new refrigeration machines making Rockefeller Center's airconditioning installation, with a cooling capacity equivalent to the daily melting of 15,382 tons of ice, the world's largest for office buildings.

Simonoils, baseball nine sponsored by the Simon Oil Co., Inc., Niagara Falls, N. Y. For the second straight year the team made a clean sweep of the Independent Division of the Double-Eye Baseball League. The team won both the league title and the playoffs. Bob Shaffer manages the team, which also plays exhibition games throughout Simon Oil's marketing area. The company sponsors a Junior League team, too, which this year got as far as the semi-finals in the playoffs.

and automatic water level control for all low pressure steam boilers from the small domestic boiler to the multiple installation with mechanical return system. Following the same basic pattern as its predecessor the book tells the story with simple diagrams and explanations and contains a complete Table of Contents.

Copies may be obtained from McDonnell & Miller, Inc., 3500 N. Spaulding Ave., Chicago 18, Ill.

Michigan firms consolidate to form Air Engineering Co.

MARSHALL & WELLS CO., headed by Robert L. Wells, Grand Rapids, Mich., and Air Engineering Co., Kalamazoo, Mich., headed by Frank K. Platt, have consolidated their operations, with Air Engineering Co. emerging as the principal firm.

Air Engineering will represent American Air Filter Co.'s complete line of air filtration, dust control, heating and ventilating equipment, and Illinois Engineering Co. steam specialties.

The main office for the new organization will be 521 South Burdick St., Kalamazoo, Mich., with branches in Grand Rapids, Mich., and South Bend, Ind. Personnel of both firms will remain intact.

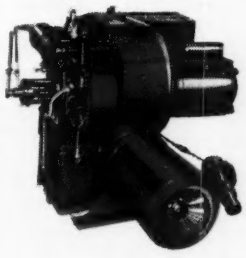
Thatcher Furnace Co. offers new sales promotion Pieces

A LARGE NUMBER of new sales promotion pieces are available to dealers of Thatcher Furnace Co., Garwood, N. J.

Many of the sales aids stress the savings a homeowner can realize if his heating system gets periodic care from an experienced and skilled heating equipment dealer.

Believe us! We *know* why Cadillac once published an advertisement titled,

"The penalty of Leadership"



No leader can escape the attention of imitators! There's proof of this rule in Cleaver-Brooks' HEV-E-OIL— *today's most-copied heavy oil burner*

As stated in the Cadillac advertisement years ago, "In every field of human endeavor, he that is first must perpetually live in the white light of publicity. Whether the leadership be vested in a man or in a manufactured product, emulation and envy are ever at work."

When introduced eighteen years ago, the Hev-E-Oil burner was a standout and constant improvements have kept it so. It still is the first and only burner *successfully* applying the principle of low pressure air atomization of heavy fuel oils *inside the burner nozzle.* At last . . . a burner that could properly use low-cost, high-heat-content heavy fuel oils, such as No. 5.

Hev-E-Oil features are imitated, of course . . . not in their entirety but in adaptations and "pick-ups" . . . competition scrambles to find "something just as good."

"If the leader truly leads, he remains . . . the leader."

Consider these Hev-E-Oil exclusives:
— oil atomized inside the burner nozzle by low pressure air.
— all air for combustion furnished by the burner without draft.
— starting delayed until oil temperature is correct for electric ignition.
— automatic pressure lubrication with *lubricating oil.*
— the only line of combination oil and gas burners burning either fuel at maximum efficiency.

These are the Hev-E-Oil burner features that make it so modern it'll be new and unequalled for years to come.

Write today for complete information.

CLEAVER-BROOKS COMPANY, BURNER DIVISION, Dept. M.
379 East Keefe Avenue, Milwaukee 12, Wisconsin

HEV-E-OIL BURNERS

27 MODELS — 5 GPH TO 90 GPH CAPACITY — INCLUDING COMBINATION HEAVY OIL AND GAS OR LIGHT OIL AND GAS FIRED MODELS.

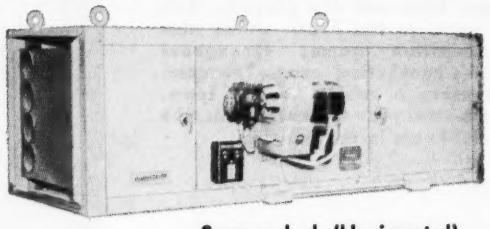
PERFECTAIRE

Use PERFECTAIRE
LARGER OIL FIRED FURNACES

Perfectaire capacities continue to increase when others stop. Larger furnaces give larger profits.

OPEN TERRITORIES FOR DISTRIBUTORS

OIL-FIRED FURNACES
Floor Mounted 75,000 to 2,000,000 BTU
Hi-Boys 75,000 to 345,000 BTU



Suspended (Horizontal)
75,000 to 1,000,000 BTU

AIR CONDITIONING ENGINEERING CO. CAMBRIDGE, 41, MASS. KI 7-2700

Renick & Mahoney announces Publication of 1957 Catalog

RENICK & MAHONEY, INC., New York, N. Y., now is distributing its 1957 catalog.

The catalog contains a roster of leading national manufacturers of products for petroleum marketing. Comprising 96 pages of product descriptions, illustrations and specifications, it previews many new products and developments designed for the economical handling of liquids. Features of the catalog are a number of informative installation diagrams, cross-section views of products, and a complete, simplified index.

Copies may be obtained from the company at 380 2nd Ave., New York, 10, N. Y.

Century Engineering issues Catalog on Heating-Cooling

CENTURY ENGINEERING CORP., Cedar Rapids, Ia., has published a catalog listing its heating and cooling combination units.

Cooling capacity, ratings and specifications for the various airconditioning units made by the company are given.

Catalog for heating Dealers published by General Fittings

A GUIDE to the selection of domestic water heating and piping specialties is included in a new catalog issued by General Fittings Co., Greenwich, R. I.

Containing more than 100 illustrations and diagrams, the 16-page catalog gives detailed information on the company's line of external and internal tankless water heaters, indirect water heaters, mixing valves and other specialties for residential and commercial heating and plumbing systems.

Special award by the National Safety Council was presented to Penn Controls, Inc., Goshen, Ind., for that company's new all-time safety record of two million man-hours worked without a lost-time injury. Ralph S. Penn, below, second from left, receives a plaque from Eli D. Miller, representative of the National Safety Council. State Police Sgt. W. E. Hunter and Joseph P. Bradford, Penn's personnel director look on.

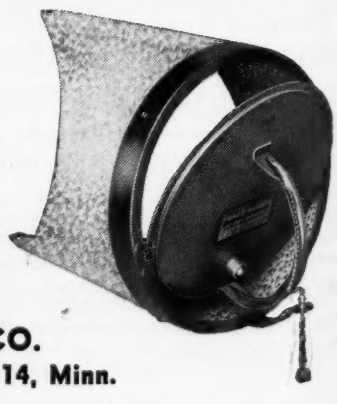
COLE-SEWELL Draft Controls: *Outperform, Outlast Others*

COMMERCIAL DRAFT STABILIZER

Open check type. All moving parts perfectly counterbalanced in all positions. Extra large blade gives maximum control on high draft. Friction-free bearings for highest performance and long life. Heavy construction.

DUO-DRAFT CONTROL FOR GAS

Double-acting Draft KoreKtor; factory balanced to hold extremely accurate draft. Full range of domestic sizes: 7" through 12". All commercial sizes. Knife-edge bearings. Individually cartoned. Finest quality construction.



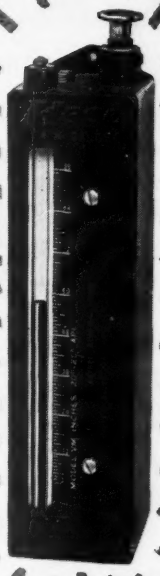
COLE-SEWELL ENGINEERING CO.
2288 University Avenue St. Paul 14, Minn.

new!

KECO

Remote-Reading **TANK GAUGE**

For Oil and Gasoline



- Versatile!
- Attractively Priced!
- Economical to Handle!
- Minimum Dealer Inventory!

FREE BULLETIN shows why the Keco gauge is a natural for users, distributors and dealers alike. Write Today!

KING ENGINEERING CORP.

Box 410 • Ann Arbor, Mich.

MANUFACTURERS OF GAUGING EQUIPMENT FOR OVER 30 YEARS

More for your Money in

MORYSVILLE

Morysville U-2 for ½, ¾ or 1 ton chassis

BEST BODY - BEST BUY

- 14 and 16 ga. Body Steel (14 ga. throughout for models rated 1 ton up—19 ga. doors)
- 12 ga. Diamond Floor Plate
- Heavy U-Channel Understructure
- Electric Welded throughout
- Telescoping Roof and Hinged Gate
- Full-length Hinges with Brass Pins
- Solidly Framed Doors and Panels
- Recessed, Spring-loaded Latches with Individual Locks or Master Locking Device
- Fendix Undercoating (No Extra Charge)

IMMEDIATE DELIVERY • Distributors in Principal Cities

"BODIES YOU CAN DEPEND ON" TO LAST INDEFINITELY

MORYSVILLE Body Works INC.

813 SOUTH READING AVE BOYERTOWN, PENNA

20th ANNIVERSARY '37 - '57

K&K BOILER CLEANER!

for STEAM and HOT WATER

KEK GIVES NEW BOILERS A FAST, EFFICIENT START.

KEK REVIVES OLD BOILERS, REMOVING SCALE, OIL, CORROSION FROM ENTIRE SYSTEM.

KENITE LABORATORY MADISON New Jersey

TAKE A TIP

. . . Use IRCO Mirro-Glo combustion chambers — not just a castable but a FIRED ceramic insulating refractory with millions of tiny mirrors to produce efficient combustion right from the start.

Distribution in principal cities

INSULATING REFRACTORIES CO.

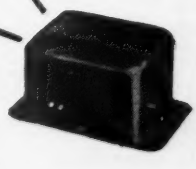
SAN RAFAEL CALIF.

NATIONAL REBUILTS ARE BEST

Wholesalers! you can depend on NATIONAL for

Acceptability
Experience
QUALITY
SERVICE

LET *NATIONAL* SOLVE YOUR TRANSFORMER EXCHANGE PROBLEMS



NATIONAL REBUILDERS

1027 GRAND ST., BROOKLYN 11, N. Y.

It's a . . . **KAM** Exclusive!

Removable Coil | ALL Copper

TANKLESS HEATER

Defies Comparison--At ANY Price!

- Can be installed either vertical or horizontal
- REMOVABLE feature permits re-use of shell or coils
- Ideal for hard-water areas

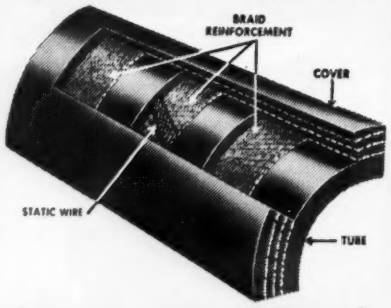
KAM Our 51st Year

KAM WATER HEATER MFG. CO. INC.

239-249 Alabama Ave., Brooklyn 7, N. Y.

RENICK & MAHONEY, INC.

EQUIPMENT THAT CUTS COSTS



HEWITT ROBINS FUEL OIL HOSE

For reel service in gravity or pressure delivery. Flexible, lightweight. Tough, durable, nonmarking cover resists oil, weathering, sun-checking, abrasions. Multiple braid construction resists kinking. Built-in wire for positive static dissipation.

Write for our new 1957 complete catalog

RENICK & MAHONEY, INC.
380 Second Ave. (at 22nd St.)
New York 10, N. Y.

Complete Equipment for the Oil Trade

SERVICE

USE it — — SELL it!

"E-Z" fuel oil SOOT DESTROYER

For more than 20 years, "E-Z" has been manufactured, nationally advertised and sold throughout America. It is a thoroughly tested and proven product, and is preferred and recommended by oil burner servicemen from coast to coast because;

1. "E-Z" quickly and thoroughly eliminates fuel oil soot in only one *application.*
2. "E-Z" eliminates the need for cleaning equipment.
3. "E-Z" saves time and manpower.
4. "E-Z" is *safe* and easy to use.
5. "E-Z" is UNCONDITIONALLY GUARANTEED

SEND COUPON FOR FREE SAMPLE!

NORMAN CHEMICAL CO.
1630 Carroll Ave., St. Paul 4, Minn.

Please send us FREE SAMPLE of "E-Z" Fuel Oil Soot Destroyer for testing. Send literature and complete price set-up.

Name .....
Firm .....
Address .....
City ..... State .....

Gas Competition

(*Begins on page 12*)

The important phase of this question had to do with whether the marketers who have cooperative campaigns feel that they have been effective in improving the competitive position of oil heat. The answer is 83% yes to 17% no or approximately five to one. That is a pretty good indication that they are effective among the dealers who are working hard to tie-in with the campaigns.

Dealer Comments: Typical comments on the gas competitive situation were these. . . .

"The gas company breaks all laws in advertising: they show untrue pictures and statements of so-called heating contractors who are not listed in the phone book." . . . "Utility advertising stresses that gas is dependable and has no soot insinuating that oil heat does not have these virtues." . . .

"The low cost of gas installations has us beat." . . . "In addition to our Better Home Heat Council program, Winkler dealers have joined together to promote Winkler oilheating equipment through a 52 week television program." . . . "Gas will do to us what oil did to coal, but much faster." . . .

"To have an effective campaign against gas in the Metropolitan New York area, all oil dealers must unite under one organization—as in the saying: 'United we stand, divided we fall.'" . . . "I believe the effort being put out by oil associations in cooperative advertising will pay off in the long run." . . .

"The cooperative programs are a case of too late, and too little; much more strenuous and continuous campaigns should be launched by all concerned including burner and accessory manufacturers, major oil companies and fueloil dealers." . . .

"With the exception of one or two majors in our area, there is little or no help from the major oil companies. Our own supplier is quite lax and apparently indifferent and we in our own little way are raising hell with them—I trust others in the same situation will do likewise." . . .

Fueloil Blending

(*Begins on page 70*)

has now been used for two seasons, Commonwealth has realized a 50% increase in No. 4 business. Twenty per cent of the total No. 4 business is specialty blends—usually something between 50:50 and 20:80—and a considerable increase in this type of operation is forecast. To be quite frank, Commonwealth's greatest satisfaction with the blender is being able to tailor output to any customer's specification.

A question on blending of No. 2 and No. 6 which is heard most often asks about the possibility of separation. This concerned Commonwealth, too, and in order not to load a truck with a bad blend the product was made up in a 20,000 barrel tank from which shipment was made. After one full tank load (20,000 barrels) had been delivered, Commonwealth was sufficiently convinced of the blenders reliability to deliver "on spec" with no separation on standing. As a result, since February, all blends have been made direct to trucks.

Viscosity checks are made once a week, except on special blends which will be tested on each order. Since Commonwealth is operating from No. 6 and No. 2 storage which is static for a season, there should be little need to do more than make routine verification that settings have not been disturbed or that No. 6 has not stratified. The continuous blending theory on which the blender operates—for each small quantity of No. 6 entering the manifold at any one instant, there is a proportionate increment of No. 2—and the turbulence produced by the blend meter and line running to the fill nozzle is sufficient to insure a thoroughly mixed blend.

Separation on standing has yet to occur on any one of over 25 such installations. In fact, samples from customer tanks have been tested after no usage from Spring to Fall with no change in viscosity top or bottom.

A trend in fueloil marketing is gradually emerging. As the customer learns more of his particular requirements on fuel, his supplier, with modern equipment, can fulfill these needs without additional storage tanks.

NOW there are 14

Vaporite MODELS

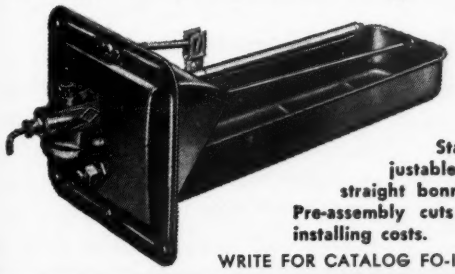
. . . a size and type Humidifier for every furnace installation.

SERIES 555
Fits any straight side warm air furnace.

Corrosion resistant, stainless steel vapor pan 4" x 15". Completely assembled for quick and easy installation.

New copper overflow on Model 555C.

New sensitive thermostats assure balanced humidity.

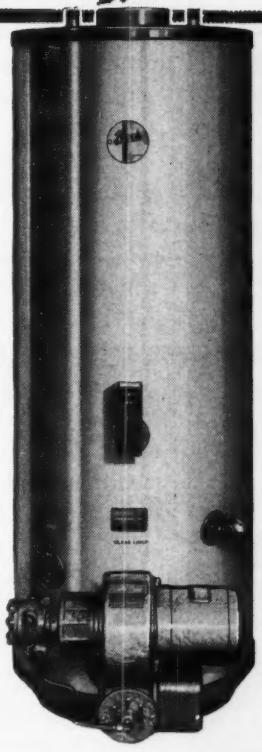


SERIES 577
Stainless steel. Adjustable to sloping or straight bonnet furnaces. Pre-assembly cuts labor time and installing costs.

WRITE FOR CATALOG FO-11

AUTOMATIC HUMIDIFIER CO, Cedar Falls, Iowa.

Glass Lined WATER HEATERS



30-50-70 Gallons Storage

● A size to meet every home requirement. Uses pressure burner, number 2 oil, and sells at popular prices. Every feature for volume sales.

● Also made in a booster model with large pipe connections for use with an extra storage tank. This model is also suitable as a booster for 180 degree water.

Bock Corporation

110 S. Dickinson St. ● Madison 4, Wis.

Solve YOUR SERVICE PROBLEM DUE TO MODERN DETERGENT FUEL OILS—

Hydrovalve's New NEOPRENE-BINDER

GASKETS

Eliminate costly call backs on your Oil Burner Servicing. Modern fuel oils attack ordinary Gasket material...

Hydrovalve's New NEOPRENE-BINDER completely saturates the fibres of the Gasket material and makes them detergent resistant... for long-lasting seepage-free sealing.

For your FREE Hydrovalve Wall Chart of actual size Gaskets, write us today!

Hydrovalve Co.

1319 Utica Ave., Brooklyn 3, N. Y., BUckminster 4-1330

OIL HEATING MEN—

BE AN EXPERT IN YOUR FIELD!

► The oil heating industry has great need for men with specialized training.

► The *Boston School of Advanced Oil Heat Training* offers a 3-day course covering: proper firing rates—combustion chamber design—baffling of boilers—draft control—mating of air and oil patterns—nozzle application tests.

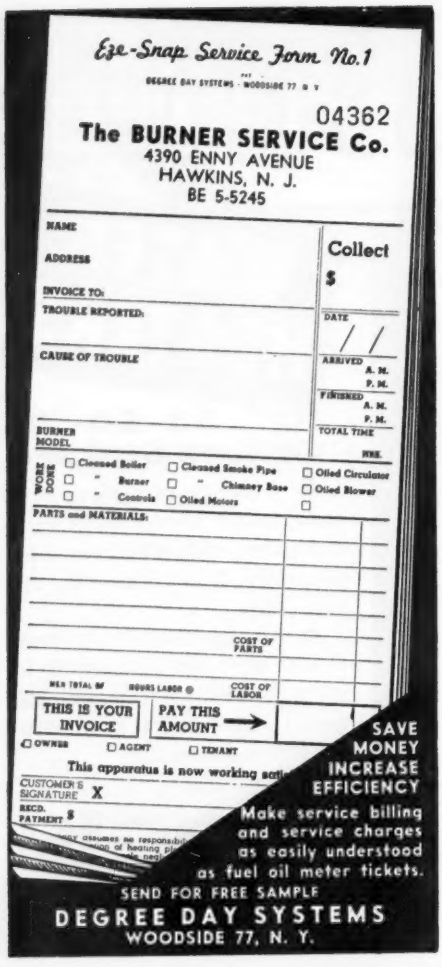
► For men with one or more years experience in the installation and service field *only*.

► This course is offered monthly during most months of the year.

Write for complete details

BOSTON SCHOOL of ADVANCED OIL HEAT TRAINING, INC.

Manufacturers—Central National Bank Bldg.
Lynn, Massachusetts



Destiny for Distillates

(*Begins on page 66*)

nation decides what is best for all. Your economic life—yes, your very life—may well depend on how this problem is resolved in the immediate future. In the fullest sense of the word, you court disaster if you do nothing about it.

There is only one more topic on which I now would like to spend a few minutes—something you gentlemen should consider carefully. We will certainly all agree that if the heating oil business is to continue in growth and strength, a considerable amount of oilheating equipment must be sold to new consumers. Since the major part of the oilburning equipment installed to date has been sold by heating oil distributors, it is reasonable to assume that they are best qualified to carry on this endeavor. It is, therefore, to those of you who now sell oilburning equipment and to those of you who might be persuaded to enter that field that I make this suggestion.

Bring young men into your organization as oilheating equipment salesmen. Shoot for young men just graduated from college—and don't underestimate your chances of getting them. While a great many large corporations are aggressively soliciting these prospective employees, they don't get them all. I have a strong suspicion also that some of them would prefer to begin their sales experience with a small organization where their talent and ability might be more quickly recognized and rewarded. Each spring these young men are coming out of our colleges and institutions of higher learning in ever-increasing numbers. Almost without exception they are eager for attractive employment.

Instruct young men

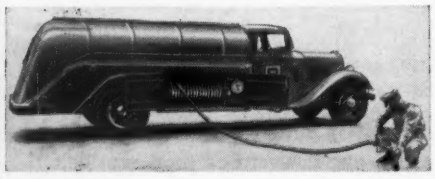
I make this recommendation because I am convinced that these young men are ideally qualified to absorb the information and instruction you can impart out of your background of experience and applied know how. It would be a catastrophe if that knowledge you have accumulated should be lost. Cash in on it by passing it along to disciples who can grasp it quickly and make it a part of their sales habits and personality before the responsibilities of family life compete for their time and attention.

Young men just out of college will be more receptive to your instruction and direction than seasoned salesmen. Capitalize on their enthusiasm, their receptivity, and their freedom from the hindrances that advancing years and responsibilities of management have put on your own sales activities.

How to find them, I realize, may appear to present a formidable problem to many of you. I feel confident, however, that the Dean of Men or the Dean of the School of Business in any college will be glad to arrange interviews for you with eligible and interested candidates for any job you may have available. Many colleges have student placement departments who assume this responsibility. Don't be frightened away from making a contact of this kind.

Just remember this. Most of the people you will visit in making such a contact will be just as impressed with your ability to conduct a successful

SAVE on FUEL OIL DELIVERY HOSE



Long-wearing, top-quality hose racks and reels easily. Repeat-ordered for years by thousands of careful purchasers. Multiple-braid carcass. Static wire inserted. Furnished with full-flow male & female couplings (unless male & male specified). SATISFACTION GUARANTEED or you may return hose on receipt for full refund.

MAIL ORDER NOW—IMMEDIATE DELIV.

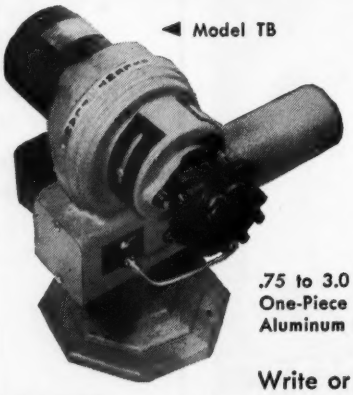
Lengths	1" I.D.	1¼" I.D.
50 ft.	$34.70	$51.35
75 ft.	49.70	74.10
100 ft.	64.70	96.85
125 ft.	79.70	119.60

3% freight allowance on orders of $100 or more.
Terms: 2%—10 days to rated firms. Otherwise C.O.D.

CARLYLE RUBBER CO., Inc.
103-05 Warren St., New York 7, N. Y.
Request complete literature Digby 9-3810

MURRAY Says:
You can't buy a better burner at any price—and only our price is competitive!

◄ Model TB



.75 to 3.0 Gph
One-Piece Cast
Aluminum Housing

Write or phone us for: Complete line of quality oilburners, sump pumps, circulators, and laundry tray pumps.

SILENT-FLAME
MANUFACTURING CO. INC.
Blue Point, L. I., N. Y. EM 3-6201

NOW SERVING YOU FROM NEW ENGLAND'S MOST ACCESSIBLE ARTERY
ROUTE 128! (Turn at Route 62)

ESTABLISHED 1865
Waverly
HEATING SUPPLY CO.

NEW ENGLAND'S LEADING MANUFACTURER AND SUPPLIER

- Blue stove pipe and fittings
- Chromium plated stove pipe and fittings
- Galvanized stove pipe and fittings
- Prefabricated duct and fittings
- Perimeter heating pipe and fittings
- Small-pipe heating pipe-fittings

STOVE RANGE **REPAIRS** FURNACE BOILER

117 ELLIOTT STREET • BEVERLY, MASS.
Telephone: Boston, Prospect 6-9090 • Beverly, Walker 2-0581

PELCO FUEL & BURNER CORPORATION

"The ... Burner that Saves Fuel"

Parke Hill Chemical Corp.
29 Bertel Avenue
Mt. Vernon, N.Y.

Gentlemen:

Until we began using the Blue Heat additive we had been bothered with clogged up nozzles on certain makes of burners which we are servicing. Blue Heat has eliminated this problem.

Blue Heat has dispelled the offensive fuel oil odor caused at our loading racks. Before using Blue Heat the odor of the fuel oil was quite obvious throughout our terminal, now the same is not noticeable at all.

As you can see by our letterhead we are featuring Blue Heat in our fuel oil.

I believe that your additive will increase our fuel oil sales considerably during the coming heating season.

Sincerely yours,

P. Lemaire
Pres.

PROOF

HIGH-TEST PREMIUM
BLUE HEAT
FUEL OIL ADDITIVE

builds Fuel Oil Business

Write today for a franchise in your area

PARKE-HILL CHEMICAL CORP.
29B Bertel Ave. • Mount Vernon, N. Y. • MOunt Vernon 8-7220

LITE-CAST
COMBUSTION CHAMBERS
QUICK HEAT LONG LIFE

MONOGRAM has...

192 Standard Designs and sizes of LITE-CAST Insulating Refractory Combustion Chambers for ALL Boilers and Furnaces.

TONGUE & GROOVE JOINTS
•
HIGH SIDE WALLS
•
DOUBLE SEAL BETWEEN FLOOR & WALLS
•
PRE-CAST FLOOR
•
AIR SPACE BENEATH FLOOR

.75 TO 12 GALLONS PER HOUR

U.S. Pat. No. 2073438

MONOGRAM PRODUCTS CO., INC.
731 NORTH 35th STREET, PHILADELPHIA 4, PA.

THESE OUTSTANDING FEATURES MAKE *Cronco* MIST-MASTER THE BEST HUMIDIFIER!

TWO-STAGE WATER FILTER TRAP AND SPRAY NOZZLE
Special alloy valve, brass filter screen, corrosion resistant nozzle.

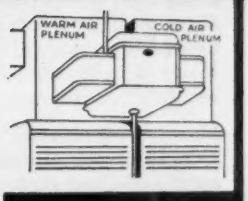
WATER FILTER CARTRIDGE
Superfine filter trap, removable brass cartridge, constant spray action.

EVAPORATOR-FILTER PAD
Miracle fibre pad provides evaporator surface, assures pure, humid air.

HUMIDITY CONTROL DIAL
Set dial for desired humidity and comfort.

***Cronco* MIST-MASTER OFFERS CUSTOMERS...**
Trouble Free Humidity
SAFEGUARDS HEALTH LOWERS FUEL BILLS
OFFERS YOU **Profitable Sales**
THE *Cronco* MIST-MASTER HAS
NO MOVING PARTS PLATES TANKS FLOATS OR HOLDERS POURING OR ADJUSTING

A Door Opener For PLUS Off-Season Business For Your Dealers!



WRITE — PHONE — WIRE
Cronstroms
MFG., INC.
4225 HIAWATHA AVE.
MINNEAPOLIS 6, MINN.

HAYWARD
Rotary Atomizing Burners
¾ to 12 Gph
Boiler-Burner Units
400 to 730 Sq. Ft. EDR Steam
Pressure Atomizing Burners
¾ to 10 Gph
Boiler-Burner Units
200 to 2000 Sq. Ft. EDR Steam
Write for franchise information:
HAYWARD OIL BURNER CORP.
86 Kirkland Street, Cambridge, Mass.
Factories in Brooklyn, N. Y. and Taunton, Mass.

If I used fuel oil meter tickets, I'd order from Cromwell for 2 color printing and the fastest delivery in the industry.
Send for FREE catalog
CP CROMWELL PRINTERY
INCORPORATED
CHURCH AT BLEECKER ALBANY 1, N. Y.

business as you may be by the academic atmosphere and surroundings to which you will be exposed. They are fine people. They are most anxious to see to it that all their graduates are offered the opportunity to secure gainful employment.

In brief summary, there is ample evidence of the most reliable sort that the future for distillate heating oils is still a bright one. You can heighten and maintain its luster indirectly by using your influence to insure that the American petroleum industry makes intelligent use of the world's available crude oil supplies, and directly by being ultra-selective in your choice of the men through whom your hard-won knowledge of the business will be perpetuated.

Exhibitors

(*Begins on page 63*)

	Space No.
The Warren Co.	555
Watsco, Inc.	235-36
Weatherhead Co.	738
Weber Showcase & Fixture Co.	247
Westinghouse Electric Corp.	249-51 & 750

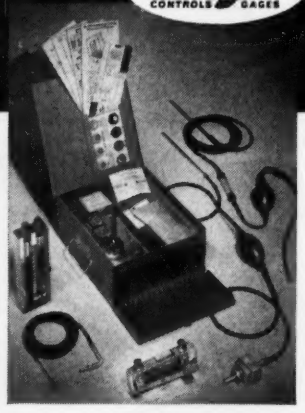
Attending: B. Henderson, W. H. Cott, D. R. Meckstroth, R. L. Sherrill, Jr.
Exhibiting: Heat pump, packaged chiller, airconditioning, motors, brazing demonstration.
New Products: Heat pump.

Westinghouse Electric Corp.	355-56
White-Rodgers	714-16

Attending: E. E. Harwood, C. Garner, R. A. Sherer, A. Peterson, G. Powell, R. Weber, E. Robinson, E. Wechsler.
Exhibiting: Thermostats, temperature and pressure controls.
New Products: Push-button thermostat for heating-cooling, 1-piece and 2-piece airconditioning control panels, Ice-Bank controls.

Wilcolator Co.	658
Wilson Mfg. Co.	216
Wolverine Tube Div.	551
Worthington Corp.	123-24-26
York Corp.	643-44-45-46

A Complete Combustion Efficiency Test In 30 Seconds With the NEW, Low-Cost
DWYER COMBUSTION TEST KIT (No. 1100)
Dwyer CONTROLS GAGES



Measure Combustion Efficiency with this new, low-cost DWYER Test Kit
- *SIMPLE TO USE*
- *LIFETIME ACCURACY*
- *PORTABLE*
- *COMPLETE*
- *INEXPENSIVE*

Includes:

CO_2 Indicator	Smoke Gage
Draft Gage*	Slide Rule Computer
Stack Thermometer	Magnoclips
	Instructions

...and all necessary accessories and fittings

Here's everything you need for a thorough, professional job of combustion testing. This new DWYER Kit simplifies the testing of any installation . . . residential, commercial or industrial: gas, oil or coal fired. You can perform a complete analysis in less than 30 seconds . . . *accurate to within ±½% CO_2.*

Handy, handsome metal kit—(also available with CO_2 Indicator alone)—is custom-fitted for all necessary parts and accessories.

***Draft Gage...famous DWYER Inclined Manometer. Continuously indicating type, permanently accurate—choice of ranges: 0 to ¼", 0 to ½", or 0 to 1" water.**

Write for complete information

F. W. DWYER MFG. CO.
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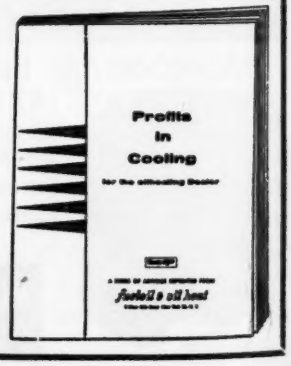

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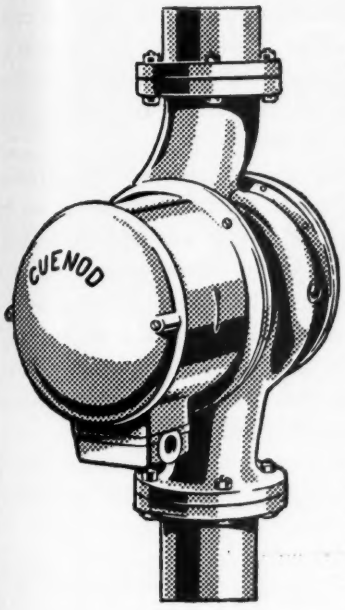

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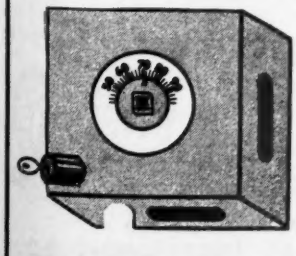

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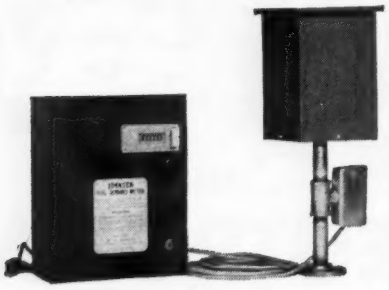

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General Controls

(Begins on page 56)

"CC1" for the fan motor and "CC2" for the compressor motor. The dual pressure control (low-side and high-side) is in series with solenoid coil "CC."

Inside panel RP242B, in the large drawing, connects to the room thermostat as shown, putting the thermostat and its low-voltage switches in command of the operation of all of the heating-cooling equipment.

General Controls RP Series of master-control panels give manufacturers and installers integrated electrical control centers for the automatic operation of domestic and commercial heating-cooling central systems. In these panels are transformers, relays, pressure controls, line-voltage contacts for starting small and large motors, and other electrical components—all prewired to terminal blocks readily accessible and easily identified by the electrician who does the field wiring.

The General Controls RS108A-144H master-control panel shown in the accompanying photograph has two highly interesting special-purpose relays. These provide "automatic remote re-set" for the refrigeration system. Assume that the high-side pressure control is of the manual re-set type—as it should be on certain installations according to safety authorities, to give warning of high-side control shutdown.

The high-side control stops the refrigeration compressor motor, say because of a drop in line voltage for a few minutes or because a piece of newspaper blew against the air-inlet of an air-cooled compressor motor.

Because of the high-side control shut-down, the homeowner phones the equipment installer.

Without making a service call, the dealer can tell the owner how to start up the cooling equipment again. The owner must simply move the "System Switch" of the room thermostat to its "Off" position, then set it to "Cool" again. Thanks to the special-purpose relays, this has the effect of manually resetting the high-side refrigeration control.

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The chest is equipped with brackets for the mercury thermometer, and the TEMPOINT 200°-1000° F. Dial Thermometer shown at the right which may be substituted for the mercury thermometer at slight extra cost.

Ask your Jobber or Write for Bulletin 730

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